AutoDome 600 Series Analog PTZ Camera

VG5 600 Series

BOSCH

en User Manual

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1 Getting Started

Install and wire the AutoDome according to the *VG5 AutoDome Installation Manual*. A typical system includes a keyboard, matrix switcher, monitor, and appropriate wiring connections. Please refer to the individual product manuals for complete installation and setup instructions for each of the system components.

1.1 Powering On

When you turn the AutoDome power on there is a ten (10) second pause before the dome starts its homing phase. During the homing phase the camera pans left and right and tilts up and down. It also adjusts the lens focus. The entire homing phase lasts approximately 40 seconds and ends with a splash screen.

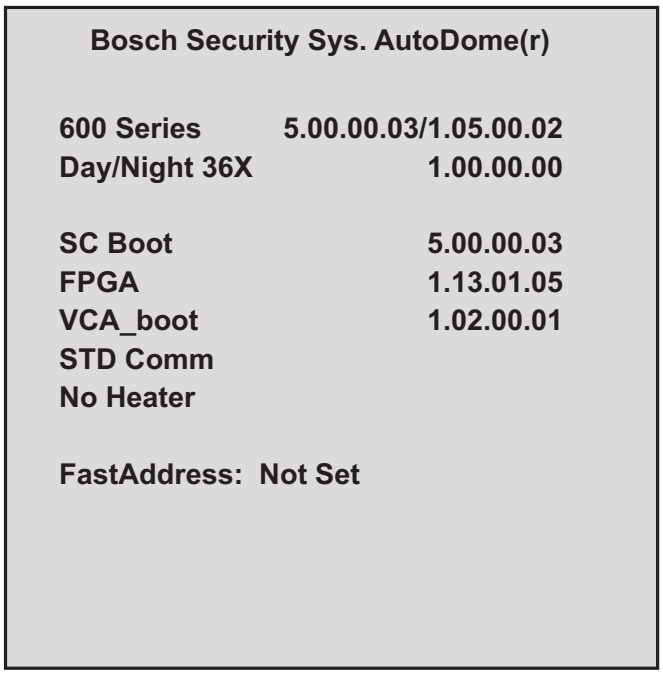


Figure 1.1 Sample VG5 Startup Splash Screen

The splash screen displays the type of AutoDome, the camera installed, the firmware levels for various files, and the current IP address (for VG5 AutoDome 700 Series models).

1.2 Establishing AutoDome Control

The most common ways to interface with the AutoDome are:

- Using a keyboard and on-screen display (OSD) menus. This method is the most common and is covered in this manual.
- Using the AutoDome Configuration Tool software running on a PC with Bilinx or the RS-232/485 communication protocol. Refer to the *CTFID User Manual* for instructions.
- Using a PC-based graphical user interface (GUI) such as the Bosch DiBos 8 software. Refer to the DiBos 8 User Guide for instructions.

1.2.1 Basic Keyboard Operation

The following tables summarize the basic operations for a standard keyboard and the functions available to control an AutoDome camera.

Typical Keyboard Features	Usage
Function Keys	Selects a specific control setting.
Number Keys	Inputs a number from 0 to 9.
Camera Key	Selects a camera number.
Enter Key	Inputs a selection.
Focus Key	Sets the lens focus or makes a menu selection in **OSD** mode.
Iris Key	Sets the lens iris setting or makes a menu selection in **OSD** mode.
Key LEDs	Indicates an active key.
LCD	Displays the current status.
Joystick	Controls a pan/tilt/zoom (PTZ) AutoDome camera.

Table 1.1 Typical Keyboard Functions

Dome Operation	How to control
To Pan Side to Side	Move the joystick left or right.
To Tilt Up and Down	Move the joystick forward and back.
To Zoom In	Twist the joystick clockwise.
To Zoom Out	Twist the joystick counterclockwise.

Table 1.2 Typical Keyboard Controls for an AutoDome Camera

1.2.2 Keyboard Commands

Keyboard control commands are composed of a sequence of three (3) inputs with the following convention: 1) a **Function** key + 2) a **Command** number key(s) + 3) the **Enter** key.

– Depending on the type of keyboard, the control function keys are labeled:
  ON or **AUX ON**
  OFF or **AUX OFF**
  SET or **SET SHOT**
  SHOT or **SHOW SHOT**

NOTICE!
The convention used for control key commands in this manual is ON, OFF, SET, and SHOT. Refer to your keyboard manual for the key naming conventions.

– Command numbers range from 1 to 999. See *Section 6 Keyboard Commands by Number, page 39* for a complete list of keyboard commands.
– The **Enter** key can also be labeled with the 8? symbol.

For example, the keyboard command to make the AutoDome pan 360º continuously is:
ON-1-ENTER (press the **ON** key, then press the number **1** key, and then press **ENTER**.)

1.3 Setting the Camera Address

Once the AutoDome power is turned on and homing is complete, you must set the camera address. You may also want to assign a password and customize some of the AutoDome default settings.

NOTICE! You do not need to set a camera address if using Bilinx or Ethernet communication. See the *VG5 AutoDome Installation Manual* to configure an AutoDome for Bilinx or Ethernet operation.

1.3.1 FastAddress

FastAddress is an AutoDome feature that allows you to set or change a camera address using the keyboard and on-screen menus.

There are three (3) **FastAddress** commands:

– **ON-999-ENTER**: Displays and programs all cameras without an address in the system.

NOTICE! If a keyboard is set to a camera number that already has an address, that camera also responds to this command.

– **ON-998-ENTER**: Displays and programs all cameras with or without an address in the system.
– **ON-997-ENTER**: Displays the current address status of all cameras in the system simultaneously.

To set an address for a camera without an address:

1. Select the camera number you want to **FastAddress**. The system displays the camera number on the keyboard and the image on the corresponding monitor.
2. Press **#-ENTER** (where **#** is the camera number without an address).
3. Press **ON-999-ENTER** to invoke an on-screen display of cameras on the system without an address.
4. Follow the on-screen instructions. You receive an on-screen confirmation when the **FastAddress** is complete.

To change or clear an address for a camera with an address:

1. Select the camera number you want to **FastAddress**. The system displays the camera number on the keyboard and the image on the corresponding monitor.
2. Press **#-ENTER** (where **#** is the camera number with an address).
3. Press **ON-998-ENTER** to invoke an on-screen display of all cameras on the system, with or without an address.
4. Follow the on screen instructions. You receive an on-screen confirmation when the **FastAddress** is complete.

NOTICE!
FastAddress is stored in nonvolatile memory and does not change if the power is turned off or if the default settings are restored.

1.4 Setting Passwords

Passwords are used to control access to locked command menus. Unlocked commands are available to all users. Passwords are four (4) digits in length.

1.4.1 Special Passwords

Password	Security Level
0000 (default)	Enables security and requires a user to enter the unlock command **OFF-90-ENTER** before invoking a locked command.
9999	Disables all security and allows all users to access locked commands.

To set or change a password (locked command):

1. Press **OFF-90-ENTER** to turn off the command lock.
2. Press **SET-802-ENTER** to access the password menu.
3. Tilt the joystick up or down to choose a number. Tilt the joystick right to move to the next number position.
4. Follow the on-screen instructions and save the password. You receive an on-screen confirmation.

2 On-Screen Display Menu Navigation

The AutoDome is programmed through the on-screen display (OSD) menus. To access the **OSD** menus, you must open the main **Setup Menu**.
Menu items marked with an asterisk (*****) are default settings, unless otherwise noted.

NOTICE!
After a period of 4.5 minutes of inactivity, a menu times-out and exits without warning. Some unsaved settings in the current menu can be lost.

2.1 Setup Menu

The main **Setup Menu** provides access to all programmable AutoDome settings. It is a locked menu that requires the user to turn off the command lock.

To open the main Setup Menu (locked command):

1. Press **OFF-90-ENTER** to turn off the command lock.
2. Press **ON-46-ENTER** to access the **Main Menu**.
3. Use the joystick to highlight a menu item.
4. Press **Focus/Iris** to open a menu.
5. Follow the on-screen instructions.

NOTICE!
The AutoDome displays only those menus applicable to the particular AutoDome Series configuration. Use the joystick to navigate through the menu and the **Focus/Iris** keys to make a selection.

Setup Menu

Exit...
Camera Setup
Lens Setup
PTZ Setup
Display Setup
Communication Setup
Alarm Setup
Language
Advanced
Diagnostics

Focus / Iris: Select

Setup Menu Choices:

Menu	Description
Exit	Exits the menu.
Camera Setup	Accesses adjustable camera settings such as: white balance, gain, sharpness, sync, line lock, backlight, shutter, and night mode.
Lens Setup	Accesses adjustable lens settings such as: focus, iris, zoom speed, and digital zoom.
PTZ Setup	Accesses adjustable pan/tilt/zoom (PTZ) settings such as: Autopan, tours, PTZ speed, inactivity period, AutoPivot, and tilt limits.

Menu	Description
Display Setup	Accesses adjustable display settings such as: OSD, sector blanking, and privacy masking.
Communication Setup	Accesses communication settings such as: AutoBaud and Bilinx.
Alarm Setup	Accesses the alarm settings such as: inputs, outputs, and rules.
Language	Displays the language.
Advanced	Accesses the advanced features menu including Stabilization, AutoTrack Sensitivity, Camera Height, and Virtual Masking.
Diagnostics	Displays the status of diagnostic events.

NOTICE!
To select the **Exit Menu** item from anywhere in the current menu, use the Zoom command.

2.2 Camera Setup Menu

The **Camera Setup Menu** provides access to camera settings that can be changed or customized. Menu items marked with an asterisk (*****) are the default settings.

Camera Setup

```
  Exit...
* White Bal:                EXT ATW
* Gain Control:             AUTO
* Max. Gain Level:          6 (4**)
* Sharpness                 12
* Synch Mode:               Internal
* Line Lock Delay:          0
* Backlight Comp:           OFF
* WDR                       OFF
* Shutter Mode:             Auto SensUP
* Shutter:                  1/60
* Auto SensUP Max:          15x
* Night Mode:               AUTO
* Night Mode Color:         OFF
* Night Mode Threshold:     55
* Pre-Comp                  1
  Restore Defaults...
  * = Factory Setting
  ** = WDR camera only
              Focus / Iris: Select
```

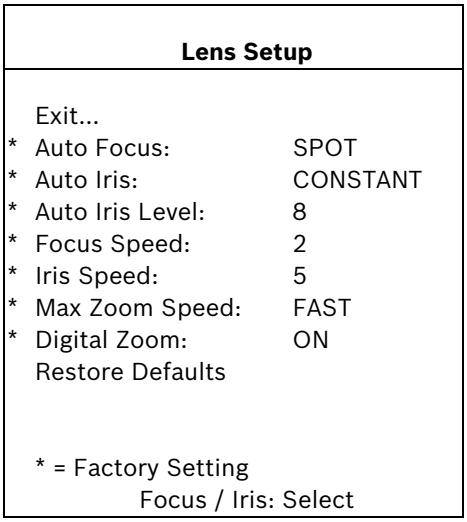
Camera Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Exits the menu.		
White Balance	Maintains proper color reproduction as the color temperature of a scene changes. For example, from daylight to fluorescent lighting.	**Extended ATW**: Adjusts camera color using extended range. **ATW**: Adjusts camera color constantly. **Indoor W.B.**: Optimizes camera color for typical indoor conditions. **Outdoor W.B.**: Optimizes camera color for typical outdoor conditions. **AWB Hold**: Sets the camera's color settings for the current scene. **Manual**: Allows a user to adjust the Red and Blue gain. Sliding scale: – (1 to 100) + **Outdoor Auto**: Automatically adjusts the white balance to reduce the dark tones at dawn or dusk. **Sodium Lamp**: Optimizes the sodium vapor light to restore objects to their original color. **Sodium Lamp Auto**: Automatically adjusts for sodium vapor light to restore objects to their original color.	**Extended ATW**
Gain Control	Electronically brightens darker scenes which may cause graininess in low light scenes.	**Auto or OFF**	**AUTO**
Max. Gain Level	Adjusts the maximum gain level that the gain control adjusts to when set to **AUTO**.	Sliding scale: – (1 to 6) + (1=8db, 2=12db, 3=16db, 4=20db, 5=24db, 6=28db)	**4**
Sharpness	Adjusts the sharpness level of the picture.	Sliding scale: – (1 to 16) +	**12**
Synch Mode	Sets the type of synchronization mode for the camera.	**INTERNAL**: Synchronizes camera to an internal crystal. This choice is recommended if there is noise on the power line. **LINE LOCK**: Synchronizes camera to AC power. This choice eliminates picture roll in multi-camera systems.	**INTERNAL**
Line Lock Delay	Optimizes the **LINE LOCK** mode to eliminate picture roll in multiphase power applications.	Sliding scale: – (0º to 359º) +	0º
Backlight Comp	Improves image quality when the background illumination level is high.	**On or OFF**	**OFF**
WDR	Turns the wide dynamic range feature on or off.	**ON, OFF, or Auto**	**OFF**

Menu	Description	Sub-menu / Description	Default Setting
Shutter Mode	Turns Auto SensUP on or off.	**Auto SensUP or OFF**	**Auto SensUP**
Shutter	Adjusts the electronic shutter speed (AES).	Sliding scale: – (60 at extreme left to 1/10000) +	**1/60 sec.** (NTSC) or **1/50 sec.** (PAL)
Auto SensUP Max.	Sets the limit for sensitivity when the shutter speed is set to Auto SensUP.	**15x, 7.5x, 4x, or 2x**	**15x**
Night Mode	Selects night mode (B/W) to enhance lighting in low light scenes.	**ON, OFF, or AUTO**	**AUTO**
Night Mode Color	Determines if color processing remains in effect while in night mode.	**ON or OFF**	**OFF**
Night Mode Threshold	Adjusts the level of light at which the camera automatically switches out of night mode (B/W) operation.	Sliding scale: –(10 to 55)+ (in increments of 5) 10 is earlier, 55 is later	**55**
Pre-Comp	Amplifies the video gain to compensate for long distance cable runs.	Sliding scale: –(1 to 10)+	**1**
Restore Defaults	Restores all default settings for this menu only.		

2.3 Lens Setup

The **Lens Setup Menu** provides access to lens settings that can be changed or customized. Menu items marked with an asterisk (*****) are the default settings.



Lens Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Auto Focus	Automatically focuses on the subject in the center of the screen.	**CONSTANT**: Auto Focus is always active, even while the camera is moving. **MANUAL**: Auto Focus is inactive; manual focus must be used. **SPOT**: The camera activates Auto Focus after the camera stops movement. Once focused, Auto Focus is inactive until the camera moves again.	**SPOT**
Auto Iris	Automatically adjusts to varying light conditions.	**MANUAL**: Iris must be adjusted manually. **CONSTANT**: Auto Iris is constantly active.	**CONSTANT**
Auto Iris Level	Reduces the camera's iris level for proper exposure.	Sliding scale: – (1 to 15) +	**8**
Focus Speed	Adjusts the manual focus speed.	Sliding scale: – (1 to 8) +	**2**
Iris Speed	Adjusts the manual iris speed.	Sliding scale: – (1 to 10) +	**5**
Max. Zoom Speed	Adjusts the manual zoom speed.	**SLOW, MEDIUM, or FAST**	**FAST**
Digital Zoom	Enables digital zoom.	**OFF or ON**	**ON**
Restore Defaults	Restores all default settings for this menu.		

2.4 PTZ Setup Menu

The **PTZ Menu** provides access to pan/tilt/zoom settings that can be changed or customized. Menu items marked with an asterisk (*****) are the default settings.

PTZ Setup

	Exit...	
*	Autopan:	30 deg/sec
*	Tour 1 Period:	5 sec
*	Tour 2 Period:	5 sec
*	PTZ Fixed Speed:	4
*	Inactivity:	OFF
*	Inact. Period	2 min
*	AutoPivot:	ON
*	AutoDome Orientation	NORMAL
*	Freeze Frame on Preposition	ON
	Tilt Up Limit...	
	Restore Defaults	

* = Factory Setting

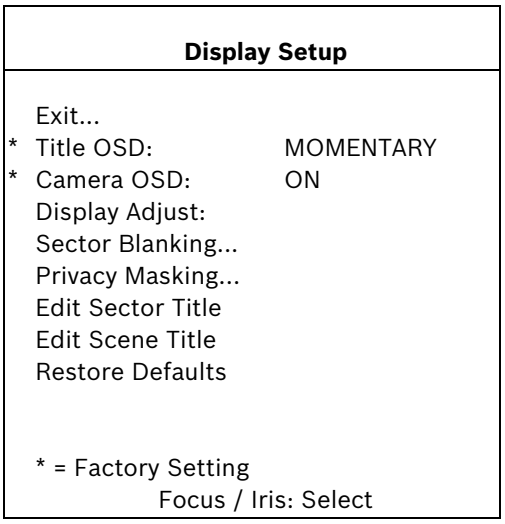
Focus / Iris: Select

PTZ Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Exits the menu.		
AutoPan	Adjusts speed of camera during AutoPan and AutoScan.	Sliding scale: – (1º/sec. to 60º/sec.) +	**30º/sec.**
Tour 1 Period	Changes dwell time between presets during the tour.	Sliding scale: – (3 sec. to 10 min.) +	**5 sec.**
Tour 2 Period	Changes dwell time between presets during the tour.	Sliding scale: – (3 sec. to 10 min.) +	**5 sec.**
PTZ Fixed Speed	Sets pan and tilt speed when controlled by a fixed speed controller.	Sliding scale: – (1 to 15) +	**4**
Inactivity	Selects the mode that an AutoDome reverts to after the period of inactivity set in the inactivity period.	**Scene 1**: Returns to Preset 1. **Prev Aux**: Returns to previous activity, such as Aux commands 1, 2, 7, 8, 50, or 52. **OFF**: Remains on the current scene indefinitely.	**OFF**
Inactivity Period	Sets the time period of inactivity before the above action occurs.	Sliding scale: – (3 sec. to 10 min.) +	**2 min.**
AutoPivot	Automatically rotates the camera 180º when following a subject traveling directly beneath the camera.	**OFF or ON**	**ON**
AutoDome Orientation	Automatically rotates the video 180º.	**INVERTED or NORMAL**	**NORMAL**
Freeze Frame On Preposition	Holds a preposition video frame while moving to another preposition.	**OFF or ON**	**ON**
Tilt Up Limit...	Sets the upper tilt limit of the camera.	Use joystick to move to a scene.	
Azimuth Zero...	Sets the zero degree pan position.	Use the joystick to move to a scene that you want to set as the zero degree pan position and as the North compass heading. Refer to *Section 7.8 Azimuth, Elevation, and Compass Directions, page 50*.	
Restore Defaults	Restores the default setting for this menu only.		

2.5 Display Setup Menu

Provides access to display settings that can be changed or customized. Menu items with an ***** are the default settings.



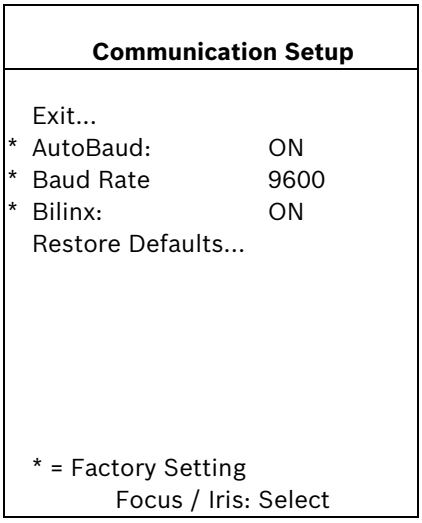
Display Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Title OSD	Controls how the OSD displays sector or shot titles.	**OFF**: Titles are hidden. **ON**: Titles are displayed continuously. **MOMENTARY**: Titles are displayed for a few seconds then disappear from the screen.	**MOMENTARY**
Camera OSD	Controls how the OSD displays camera response information, such as Digital Zoom, Iris open/close, and Focus near/far.	**OFF or ON**	**ON**
Display Adjust	Adjusts the text brightness and vertical position of the on-screen title.	**Exit**: Exits the menu. **Up**: Moves screen title up. **Down**: Moves screen title down. **Brighter**: Brightens the intensity of the on-screen text. **Darker**: Darkens the intensity of the on-screen text.	
Azimuth	Displays azimuth/elevation values.	**On**: Displays azimuth/elevation readings. **Off**: Hides azimuth/elevation readings. Refer to *Section 7.8 Azimuth, Elevation, and Compass Directions, page 50*.	**OFF**
Compass	Displays compass heading.	**On**: Displays compass heading. **Off**: Hides compass heading. Refer to *Section 7.8 Azimuth, Elevation, and Compass Directions, page 50*.	**OFF**

Menu	Description	Sub-menu / Description	Default Setting
Sector Blanking	Allows video blanking of selected sectors. Available sectors are 1 through 16. Follow the on-screen instructions.	**Exit**: Exits the menu. **Sector (1-16)**: Press **Focus/Iris** to blank or clear a sector.	
Privacy Masking	Allows masking of sensitive areas. Up to 24 privacy masks are available, with a maximum limit of eight (8) to a scene.	**Exit**: Saves and exits menu. **Mask**: 1 to 24 masking areas. Follow the on-screen instructions to set a mask. See *Section 7.1 Alarm Rules, page 42*. **Restore Defaults**: Restores the default settings for this menu only.	
Edit Sector Title	Allows editing existing Sector (Zone) Titles	Select a sector title to access the character palette. See *Section 3.3 Specifying a Shot or a Sector Title, page 26*, for instructions.	
Edit Scene Title	Allows editing existing Scene (Shot) Titles	Select a scene title, then choose a menu option: – **Edit Scene Title** to access the character palette. See *Section 3.3 Specifying a Shot or a Sector Title, page 26*, for instructions. – **Clear Scene** to delete the selected scene title.	
Restore Defaults	Restores the default setting for this menu only.		

2.6 Communication Setup Menu

The **Communication Setup Menu** provides access to baud rate and Bilinx control settings. Menu items marked with an asterisk (*****) are the default settings.



Communication Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
AutoBaud	Turns AutoBaud detection on.	Toggles **ON or OFF**. **ON** automatically accepts baud rates from 2400 to 57600. (Note: If stepping from 2400 to 57600 baud, you must first set the controller to 19200 for AutoBaud to detect the higher baud rate.)	**ON**
Baud Rate	Manually sets the baud rate when AutoBaud is set to OFF.	Choices are 2400, 4800, 9600, 19200, 38400, and 57600. Then follow the OSD to confirm the selection.	**9600**
Bilinx	Turns on Bilinx control communication. (Only available when not connected to a Bilinx data interface unit.)	Toggles **ON or OFF**.	ON

2.7 Alarm I/O Setup

The **Alarm Setup Menu** provides access to the **Alarm I/O Setup Menu** to establish the alarm inputs and outputs and to configure alarm rules.

Alarm I/O Setup		Inputs Setup	
Exit... Inputs Setup... Outputs Setup... Rule Setup... Restore Defaults... Focus / Iris: Select		Exit... 1. Alarm Input 1 N.C.S. 2. Alarm Input 2 N.O.S. 3. Alarm Input 3 N.O. 4. Alarm Input 4 N.C. 5. Alarm Input 5 N.O. 6. Alarm Input 6 N.C. 7. Alarm Input 7 N.O. 8. NONE 9. NONE 10. NONE 11. NONE 12. NONE Focus / Iris: Select Type Right / Left: Select Mode	Physical Input 1-7 Physical Output 9-12

Alarm Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Inputs Setup	Defines physical inputs or events and commands that can be used in a rule. There are twelve (12) alarm inputs available.		
Inputs 1-7	Defines the type of physical input.	**N.O.**: Normally open dry contact. **N.C.**: Normally closed dry contact. **N.C.S.**: Normally closed supervised contact. **N.O.S.**: Normally open supervised contact.	**N.O.**
Inputs 8-12	Defines input commands that can be used in a rule. Command inputs can also be customized by using non-assigned keyboard command numbers.	**NONE**: No command defined. **Aux On**: Responds to a standard or custom keyboard **ON** (1-99) command. **Aux Off**: Responds to a standard or custom keyboard **OFF** (1-99) command. **Shot**: Responds to a Preset shot or scene from 1-99. **AutoTrack**: Triggers an alarm when set to ON. **Motion Detection**: Triggers an alarm when set to **ON.**	**NONE**

NOTICE!
Alarm inputs 1 and 2 provide tamper detection, if programmed as supervised, for breaks or shorts in an alarm circuit. See the *VG5 AutoDome Installation Manual* for wiring instructions.

Outputs Setup Menu

Outputs Setup...	
Exit... 1. Alarm Output 1 N.O. 2. Alarm Output 2 N.O. 3. Alarm Output 3 N.O. 4. Alarm Relay N.O. 5. NONE 6. Aux On 1 7. Aux Off 8 8. Shot 99 9. OSD 10. Transmit 11. NONE 12. NONE Focus / Iris: Select Type Right / Left: Select Mode	1-4 Physical Outputs 5-12 Command Outputs

Outputs Setup Menu Choices

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Outputs Setup	Defines physical outputs and keyboard commands for use in a rule.		
Outputs 1-3	Defines a physical output.	**N.O.**: Normally open circuit **N.C.**: Normally closed circuit	**N.O.**
Alarm Relay	A fixed output available for use in a rule.		
Outputs 5-12	Defines a command output for use in a rule.	**Aux On**: A keyboard **ON** command. **Aux Off**: A keyboard **OFF** command. **Shot**: Recalls a preset shot. **OSD**: An on screen display. **Transmit**: Transmits a message back to the head end (available with RS-232 serial connections, Bilinx, and IP AutoDome models). **AutoTrack**: Turns AutoTrack on or off as an output. **NONE**: No command defined.	**NONE** Outputs 5 and 6 set to **OSD** and **Shot 1**

2.8 Rule Setup Menu

The **Rule Setup Menu** shows the status of the rules and lets you add new rules or modify an existing rule. The default setting is **Empty**.

NOTICE!
You can program a total of twelve rules. You must define the inputs and outputs before you program a rule. See *Section 2.7 Alarm I/O Setup, page 17*, to configure alarm inputs and outputs.

Rule Setup...			**Rule 1**	
Exit...			Exit...	
1. Rule 1	Enabled		Enabled	YES
2. Rule 2	Disabled		Input:	
3. Rule 3	Invalid		NONE	
4. Rule 4	Empty		NONE	
5. Rule 5	Empty		NONE	
6. Rule 6	Empty			
7. Rule 7	Empty		Output:	
8. Rule 8	Empty		OSD	
9. Rule 9	Empty		Shot 2	
10. Rule 10	Empty		Alarm Relay	2 sec
11. Rule 11	Empty		NONE	
12. Rule 12	Empty			
4. Rule 4	Empty			
Focus / Iris: Select			Right / Left: Select Period Time Focus / Iris: Select Type	

Rule Setup Menu Choices

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Rule 1-12	Displays the status of a rule on the right side of the menu. There are four (4) possible rule statuses.	**Enabled**: The rule inputs and outputs are properly defined and the rule is turned on. **Disabled**: The rule inputs and outputs are defined but the rule is turned off. **Invalid**: The rule has a missing or invalid input or output. **Empty**: The rule has no inputs or outputs defined.	Empty

Selecting a **Rule** number provides access to its configuration menu. The **Rule # Menu** allows you to configure a rule from previously defined alarm inputs and outputs. Once an alarm is configured with valid inputs and outputs, it can be turned on or off (enabled or disabled) through its configuration menu.

Rule # Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Enabled	Turns the rule on or off after its inputs and outputs have been defined.	**YES** to enable or **NO** to disable	**NO**
Input	Toggles through a list of valid inputs set in the **Alarm I/O Setup > Inputs Setup Menu** that define the rule's inputs. A rule can have up to four (4) inputs.	**Alarm Inputs 1 – 7** and any additional inputs which were set in the **Inputs Setup Menu**, including **Aux On/Off (1-99), Shot, and NONE**.	**NONE**
Output	Toggles through a list of valid outputs set in the **Alarm I/O Setup > Outputs Setup Menu** that defines a rule's outputs.	**Alarm Outputs 1 – 3** and any additional outputs set in the **Outputs Setup Menu** including: **Alarm Relay, Aux On/Off (1-99), Shot, OSD, Transmit, and NONE**. Some outputs, such as **Alarm Outputs 1-3, Alarm Relay, and Aux On/Off** can be set to be active for a specific duration of time as follows: **Seconds**: 1-5, 10, 15, or 30 **Minutes**: 1-5 or 10 **Latched**: The alarm stays active until acknowledged. **Follows**: The alarm follows the alarm rule.	**NONE**

NOTICE!
You can include up to four (4) **Input** and **Output** events in a single rule. Each input and output, however, must be true for the alarm's rule to be valid and enabled.

2.9 Language Menu

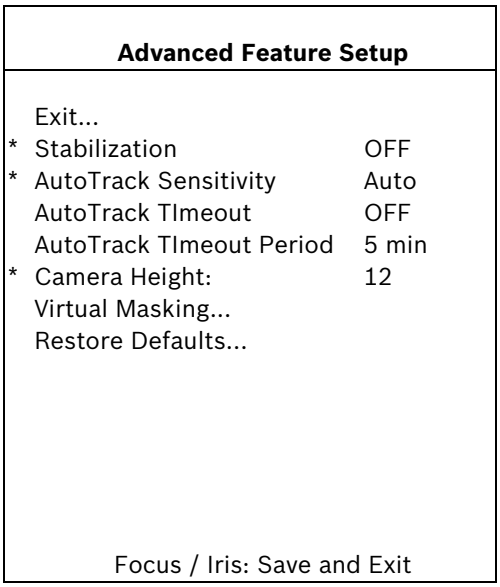
The **Language Menu** provides access to a list of languages to display the on-screen menus.

Language Menu Choices:

Menu	Description	Default Setting
Exit	Saves and exits the menu.	
Choose a language	Select a language in which the system displays the on-screen menus.	

2.10 Advanced Feature Setup Menu

The **Advanced Menu** provides access to the **Advanced Features Setup** menus such as image Stabilization, AutoTrack Sensitivity and Virtual Masking. Menu items marked with an asterisk (*****) are the default settings.



Advanced Feature Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Saves and exits the menu.		
Stabilization	Turns on video stabilization.		**OFF**
AutoTrack Sensitivity	Sets the sensitivity level of AutoTrack.	Sliding scale: -(Auto, 1 to 20)+ Where **1** is more sensitive and **20** is less sensitive. Auto varies the sensitivity level based on various lighting conditions.	**Auto**
AutoTrack Timeout	Toggles the AutoTrack Timeout feature.	When **On**, AutoTrack "gives up" after the Timeout Period if tracking in a confined area (for example a tree, a flag, etc).	**OFF**
AutoTrack Timeout Period	Enters the AutoTrack Timeout Period set menu	Sliding scale 30 sec, 1 to 30 min.	**5 min**
Camera Height	Defines the height of the camera for AutoTrack.	A range from 2.4 m (8 ft) to 30.7 m (100 ft)	**3.6 m (12 ft)**
Virtual Masking	Enters the **Virtual Mask** menu. See *Section 7.3 Virtual Masking, page 48*.	Allows up to 24 virtual masks using five anchor points.	
Restore Defaults	Restores the default settings for this menu.		

2.11 Diagnostics Menu

The Diagnostics menu provides access to a list of diagnostic tools and events.

Diagnostics

Exit...
Alarm Status...
BIST...

Internal Temp:	Deg F / Deg C
High Temp Events:	Deg F / Deg C
Highest Temp	Deg F / Deg C
Low Temp Events:	Deg F / Deg C
Lowest Temp:	Deg F / Deg C
Security Access:	0
CTFID Access:	0
Homing Events:	0
Homing Failed:	0
Loss Home Events	0
Home Position Good	YES
Restart Events:	
Low Volt Events:	0
Power Up Events:	0
Video Loss Events:	0
Total Time On	0hr 0min

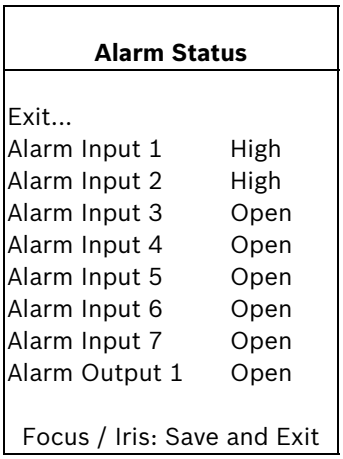
Focus / Iris: Save and Exit

Diagnostic Events

Menu	Description	Sub-menu / Description
Exit	Saves and exits the menu.	
Alarm Status	Enters the Alarm Status menu and displays the real time status of alarm inputs and outputs.	Alarm Inputs 1 to 7, Alarm Outputs 1 to 3 and Alarm Relay
BIST	Enters the Perform **Built-in Self Tests** menu. If confirmed, the BIST tests start and the results are displayed.	**YES** to start test. **NO** to exit the menu. Typical results displayed as follows: BIST Exit... Data Flash: PASS Bilinx: PASS FPGA: PASS Digital I/O 1: PASS Digital I/O2: PASS VCA: PASS Homing: PASS
Internal Temp.	Displays the current dome temperature.	
High Temp Events	Displays the number of times the high temperature threshold is exceeded.	
Highest Temp	Displays the highest temperature reached.	
Low Temp Events	Displays the number of times the low temperature threshold is exceeded.	
Lowest Temp	Displays the lowest temperature reached.	
Security Access	Displays the number of times the locked-command menu is unlocked.	
CTFID Access	Displays the number of times the Configuration Tool is accessed.	
Homing Events	Displays the number of times the AutoDome was rebooted.	
Homing Failed	Displays the number of times the AutoDome failed to home properly.	
Loss Home Events:	Displays the number of times the AutoDome lost the home position.	
Home Position Good	Displays if the current AutoDome home position is good. Displays YES if good.	
Restart Events	Displays the number of restart events.	
Low Volt Events	Displays the number of times the AutoDome dropped below the acceptable voltage limit.	
Power Up Events	Displays the number of power up events.	
Video Loss Events	Displays the number of time that video was lost.	

2.11.1 Alarm Status Submenu

This menu displays the status of the alarm inputs and alarm outputs.



Menu	Description	Options
Exit	Saves and exits the menu.	
Alarm Input 1...7	Displays the status of alarm inputs 1 through 7.	**High** **Low** **Open** (Normally Open) **Closed** (Normally Closed)
Alarm Output	Displays the status of the alarm output.	

3 Common AutoDome User Commands (unlocked)

This chapter details the commonly used Bosch keyboard setup commands. See Section 6 Keyboard Commands by Number, Page 41, for a complete list of commands.

3.1 Setting AutoPan Mode

AutoPan mode pans the AutoDome camera 360º or pans between user defined limits (when programmed). The AutoDome camera continues to pan until stopped by moving the joystick.

To pan 360º:

1. Press **ON-1-ENTER**.
2. Move the joystick to stop the pan.

To set left and right pan limits:

1. Move the camera to the starting position and press **SET-101-ENTER** to set the left limit.
2. Move the camera to the end position and press **SET-102-ENTER** to set the right limit.

To start AutoPan between limits:

1. Press **ON-2-ENTER**.
2. Move the joystick to stop the pan.

3.2 Setting Preset Shots

Preset shots are saved camera positions. Shots are saved as scenes, therefore, the terms **SHOT** and **SCENE** are used interchangeably.

To set a Shot:

1. Move the camera to the position you want to save.
2. Press **SET-#-ENTER** where **#** can be a number from 1 to 99 that identifies the camera position of the scene.
3. To specify a title for the shot, see the procedure below.

To view a Shot:

▶ Press **SHOT-#-ENTER** where # is the number of the scene position you want to view.

To store or clear a Shot:

1. Press **SET-100-ENTER** to access the **Store/Clear Scene Menu**.
2. Follow the on-screen instructions.

To disable overwrite confirmations:

If you overwrite a preset shot the AutoDome issues a confirmation message prompting you approve the overwrite. To disable this confirmation message issue the **OFF-89-ENTER** command.

3.3 Specifying a Shot or a Sector Title

The AutoDome provides an alphanumeric character palette used to specify a title for a shot (scene) or for a sector (zone).

1. To specify a title, navigate to the shot or scene:
   – for a shot: set a new shot or view a stored shot then press **ON-62-ENTER**.
   – for a scene: move the AutoDome to the scene (zone) then press **ON-63-ENTER**.
2. Use the joystick to move the cursor to highlight a character.
3. Press Focus/Iris to select the character.
4. Continue to select characters (up to 20) until you have created the title.
5. To clear a character from the title:
   a. Use the joystick to highlight the **Clear OR Position Character** prompt.
   b. Move the joystick left or right until the cursor is below the title character you need to clear.
   c. Press Focus/Iris to clear the character.
   d. Move the joystick up to bring the cursor back into the character palette.
6. To save the title:
   a. Use the joystick to highlight the Exit prompt.
   b. Press Focus/Iris to save the title.

3.4 Configuring Preposition Tours

A **Preposition Tour** automatically moves the camera through a series of preset or saved shots. The VG5 Autodome has one (1) standard preset tour and one (1) customized preset tour. Tour 1 is a standard tour that moves the camera through a series of shots in the sequence they were set. **Tour 2** is a custom tour that allows you to change the sequence of shots in the tour by inserting and deleting scenes.

To start Preposition Tour 1:

1. Set a series of preset shots in the order that you want the AutoDome to cycle through.
2. Press **ON-8-ENTER** to start the tour. The tour then cycles through the series of shots until it is stopped.

To stop a Preposition Tour:

▶ Press **OFF-8-ENTER** or move the joystick to stop either type of tour.

To add or remove scenes to Preposition Tour 1:

1. Press **SHOT-900-ENTER** to access the **Add/Remove Scenes Menu**.
2. Use the **Focus/Iris** buttons to add or remove the selected scene from the tour.

To start custom Preposition Tour 2:

▶ Press **ON-7-ENTER** to start a tour. The tour cycles through the series of shots in the order they were defined until it is stopped.

To edit a custom Preposition Tour 2:

1. Press **SET-900-ENTER** to access the **Add/Remove Menu**.
2. Press the **Focus/Iris** buttons to add or remove the selected scene.

To change the dwell period of a tour:

1. Press **ON-15-ENTER** to access the **Tour Period Menu**.
2. Select the tour (**Tour 1** or **Tour 2**) and follow the on-screen instructions.

3.5 Programming the Inactivity Operation

You can program the AutoDome to automatically change its operating mode after a period of inactivity.

To access the Inactivity mode (locked command):

1. Press **OFF-90-ENTER** to turn off the command lock.
2. Press **ON-9-ENTER** to access the **Inactivity Mode Menu**.
3. Select one of the following choices:
   - **Return to Scene 1**: Returns the camera position back to the first scene saved in memory.
   - **Recall Previous Aux**: Returns the camera to the previous operating mode, such as a **Preposition Tour**.

3.6 Recording Tours

The VG5 AutoDome can make up to two (2) recorded tours. A **Recorded Tour** saves all manual camera movements made during the recording, including its rate of pan, tilt and zoom speeds and other lens setting changes.

To Record Tour A:

1. Press **ON-100-ENTER** to start recording a tour.
2. Press **OFF-100-ENTER** to stop recording.

To playback Recorded Tour A:

1. Press **ON-50-ENTER** to begin continuous playback.
2. Press **OFF-50-ENTER** or move the joystick to stop playback

To Record Tour B:

1. Press **ON-101-ENTER** to start recording the tour.
2. Press **OFF-101-ENTER** to stop the tour.

To playback Recorded Tour B:

1. Press **ON-52-ENTER** to begin continuous playback.
2. Press **OFF-52-ENTER** or move the joystick to stop playback.

4 Alternative Control Protocols

The VG5 AutoDome supports three alternative control protocols that allows a user to send commands and to receive information from the AutoDome. The VG5 AutoDome supports the following protocols:

- Pelco-P
- Pelco-D
- American Dynamics (AD) Manchester
- American Dynamics (AD) Sensormatic RS-422

The VG5 AutoDome natively supports the two Pelco protocols. To use the AD Manchester or the AD Sensormatic RS-422 protocol you must purchase a separate module. The module contains instructions to install any additional hardware and information about additional on-screen menus.

4.1 Setting FastAddress with Alternative Protocols

The VG5 AutoDome offers remote addressing via the FastAddress capability from a keyboard that uses an alternative protocol. The FastAddress feature allows you to instal all domes first, then set the addresses via the control system. Since it is not necessary to go to the camera's physical location, this feature makes it easier to readdress cameras at a later time.

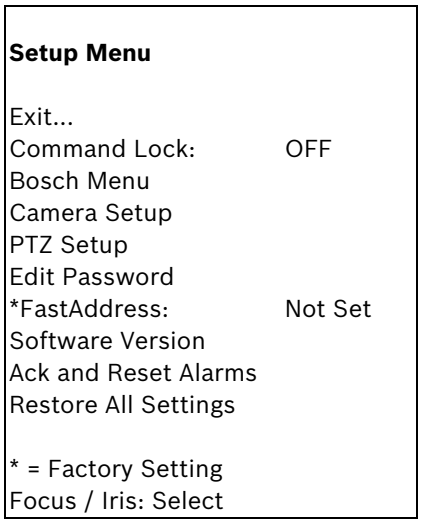
4.1.1 Using an American Dynamics Controller

Prior to setting the FastAddress for each camera, all cameras will initially move together. After the Unique Identifier is set, only the camera that was set with the FastAddress is capable of sending and receiving commands. When setting the FastAddress, it is important to remember that some American Dynamics Manchester systems use address blocks of 1 to 64, while American Dynamics Sensormatic systems typically use address blocks of 1 to 99; meaning that when the controller/keyboard displays video for cameras higher than 64 or 99 the keyboard/controller sends a different control code to the camera (see *Section A Appendix: FastAddress Conversions, page 61*, for conversion charts). For example at Camera 65, the American Dynamics Manchester system sends out an address of 1, while the Sensormatic RS-422 system with an address of 100 also sends out an address of 1.

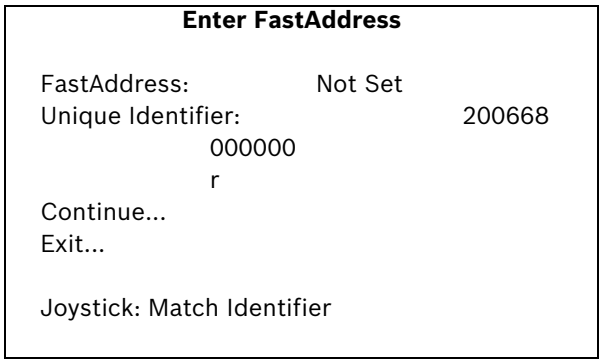
It is NOT NECESSARY to convert these numbers with the Bosch FastAddress method. The camera automatically detects the address being transmitted by the Sensormatic RS-422 control system and adjusts the camera accordingly.

Setting the FastAddress with an AD Manchester or AD Sensormatic RS-422 Keyboard

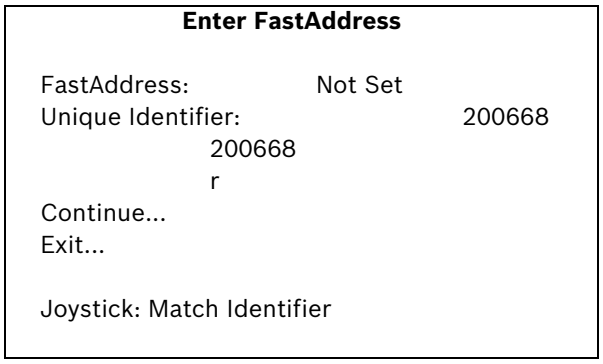
1. Enter the AutoDome Setup menu using **66-Preset/Shot** on most AD/Sensormatic RS-422 keyboards. Note: Based on your keyboard model, it may be necessary to enter the PROGRAMMING mode prior to entering this command.
2. Move the joystick to highlight the **Command Lock** menu. Note: The first time the VG4 is set-up out of the box, the Command Lock feature is set to OFF for the first two (2) minutes of operation and then reverts to the ON setting.



3. Press the **FOCUS** or the **IRIS** button to turn Command Lock to OFF. Move to the **FastAddress** menu and press the **FOCUS** or the **IRIS** button to open the menu. Use the joystick to re-enter the 6-digit factory-set Unique Identifier displayed for the VG4 AutoDome. See example as follows:

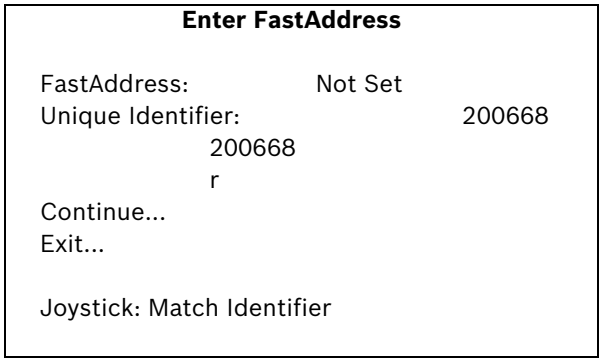


– Move the joystick up or down to select the individual number. Move the joystick right to move to the next FastAddress number position.
When completed, the FastAddress number entered must match the Unique Identifier displayed. See example as follows:

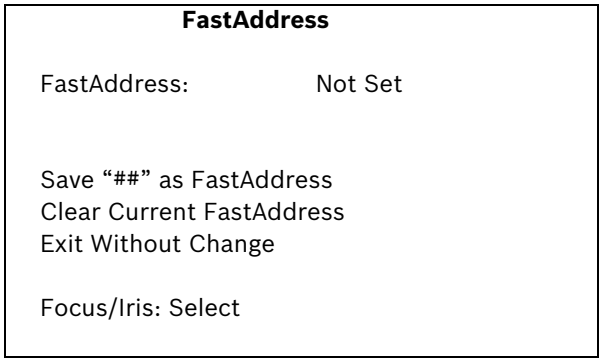


NOTICE!
If the user does not enter the exact manufacturer Unique Identifer as displayed on-screen, the FastAddress can not be set and the only option available is to Exit the menu.

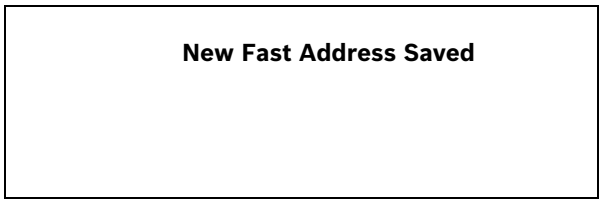
4. Move the joystick right to highlight **Continue**. Then, press the **FOCUS** or the **IRIS** button.

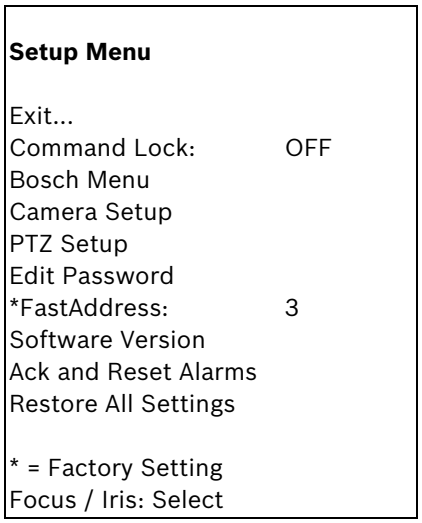


5. The AutoDome automatically reads the correct Address sent by the controller and is displayed as **Save ## as FastAddress** (**##** is based on either 1-64 AD/Manchester or 1-99 AD/Sensormatic RS-422). It is NOT POSSIBLE to change the address that is displayed. The following options are available:
   - Press the **FOCUS** or the **IRIS** button to store the FastAddress number.
   - Move the joystick to highlight **Clear Current FastAddress** and then press the **FOCUS** or the **IRIS** button to clear any currently saved Fast Address.
   - Move the joystick to highlight **Exit Without Change** to exit the FastAddress menu without saving any changes.



6. The on-screen display menu confirms that the VG4 AutoDome stored the FastAddress and then returns to the Main menu with the new Fast Address displayed. Move the joystick to highlight **EXIT**, and then press **FOCUS** or **IRIS** to exit the menus.





4.1.2 Using a Pelco Controller

This section provides instructions to set a FastAddress with a Pelco keyboard or controller.

- An AutoDome with an address set to 0 responds to commands set to any address.
- **Pelco-P** protocol must use addresses 1 to 32.
- **Pelco-D** protocol must use addresses 1 to 254.

NOTICE!

A previously configured AutoDome with an address above 32 (Pelco-P upper limit) or 254 (Pelco-D upper limit) can be used without readdressing the unit. However, no two (2) addresses can be the same. For example:
Pelco-P addresses above 32 are repeated in multiples of 32 (1, 33, 65, 97 are the same).
Pelco-D addresses above 254 are repeated in multiples of 254 (1, 255, 509, 763 are the same).

Setting FastAddress with a Pelco Keyboard

1. Press and hold **95-PRESET** for two seconds to open the Pelco Setup menu.
2. Move the joystick to select the **Command Lock** menu.
3. Press the **FOCUS** or the **IRIS** button to turn Command Lock to **OFF**.
4. Move to the **FastAddress** menu and press the **FOCUS** or the **IRIS** button to open the menu.
5. Use the joystick to enter the unique identifier for the VG4 AutoDome.
   - Move the joystick up or down to select the number.
   - Move the joystick right to move to the next number position.
6. Move the joystick right to select Continue. Then, press the **FOCUS** or the **IRIS** button.
7. Use the keyboard to enter the **FastAddress** number. Then, press the **Camera** button.
   Note: You must first clear an assigned FastAddress number to use the number for a different VG4 AutoDome.

8. Move the joystick down then back up to set the **FastAddress** number.
9. Press the **FOCUS** or the **IRIS** button to store the **FastAddress** number.
   The on-screen display menu confirms that the VG4 AutoDome stored the FastAddress number.

4.2 Pelco Protocol Mode

The Pelco Mode features Auto Baud Detection that automatically detects and adjusts the AutoDome protocol and baud rate to match that of the controller. The AutoDome responds to Pelco-D or Pelco-P protocol commands.

NOTICE!
The AutoDome supports only the RS-485 protocol while in Pelco mode. It does not transmit responses back to the controller.

4.2.1 Hardware Configuration

The AutoDome is configured from the factory for RS-485 operation in **Pelco Protocol Mode**.

1. Connect the controller's TX terminals to the AutoDome's TxD terminals. See the *AutoDome Modular Camera System Installation Manual* for complete wiring instructions.
2. Pan or tilt the keyboard joystick to confirm that control has been established to the AutoDome (approximately five (5) seconds).

NOTICE!
If control is not established, ensure that the RS-232/RS-485 selector switch is positioned to RS-485 (outward toward the LED lights). This switch is located on the bottom of the AutoDome CPU board, under the camera head and next to the LED lights. See Figure 4.1.

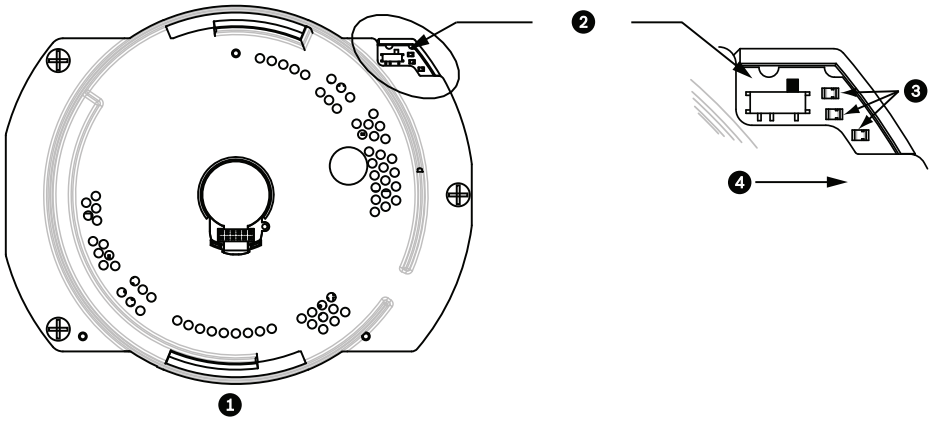


Figure 4.1 RS-232/RS-485 Selection Switch

1	CPU Module
2	Switch Location
3	LEDs
4	RS485

4.2.2 Pelco Keyboard Commands

Pelco control commands are composed of a sequence of two (2) keyboard inputs with the following convention: 1) a **Command Number** and 2) a **Function** key input.
The AutoDome uses the **PRESET** command key to save and recall presets (pre-positions) 1 through 99.

NOTICE!
To save a preset, enter the desired number and hold the **PRESET** key for approximately two (2) seconds. To recall a preset, enter the desired preset number (or command) and momentarily press and release the **PRESET** key.

4.2.3 Pelco Keyboard Commands

Keyboard Command	User Action	Description
0-Pattern	Press	Initiates recording continuous playback based upon current Recording setting (A or B) in the Setup Menu.
	Press and hold	Initiates recording based upon current Recording setting (A or B) in the Setup Menu. Press ACK to end recording.
1-Pattern	Press	Initiate Recording A continuous playback.
	Press and hold	Initiate Recording A. Press ACK to end recording.
2-Pattern	Press	Initiate Recording B continuous playback.
	Press and hold	Initiate Recording B. Press ACK to end recording.
3-Pattern	Press	Initiate the AutoDome standard preset tour (Tour 1).
4-Pattern	Press	Initiate the AutoDome custom preset tour (Tour 2).
1 – Aux On / Aux Off	Press	Activates / deactivates alarm output 1.
2 – Aux On / Aux Off	Press	Activates / deactivates alarm output 2.
3 – Aux On / Aux Off	Press	Activates / deactivates alarm output 3.
4 – Aux On / Aux Off	Press	Activates / deactivates alarm relay.
91 – Aux On	Press	Activate Zone Scan (display zone titles).
92 – Aux On	Press	Deactivate Zone Scan (re-move zone titles)

4.2.4 Special Preset Commands

Some **Pelco** mode preset commands have a special meaning and override the normal Pelco preset function as follows:

Preset Command	Description
33-PRESET	Pans the AutoDome 180° (Flip).
34-PRESET	Goes to **Zero Pan** (original home position).
80-PRESET	Toggles the **Synchronization Mode** between Line Lock and Internal (Pelco Frame Scan). This command is available if commands are unlocked using the Main menu.
81-PRESET	Initiates **Preset Tour 1**.
82-PRESET	Initiates **Preset Tour 2**.
92-PRESET	Sets the **Left** pan limit for an AutoScan with **Limit Stops** enabled.
93-PRESET	Sets the **Right** pan limit for an AutoScan with **Limit Stops** enabled.
94-PRESET	Initiates a **Preset Tour**.
95-PRESET	Enables or disables **Limit Stops** in the **Setup Menu** for AutoScan. Invokes the Pelco main **Setup Menu** when pressed for 2 seconds.
96-PRESET	Stops a scan.
97-PRESET	Initiates FastAddress (Pelco Random Scan).
98-PRESET	Toggles the **Synch. Mode** between **Line Lock** and **Internal** (Pelco Frame Scan). This command is available only for two (2) minutes after the power is applied and then reverts to normal preset functionality.
99-PRESET	Starts an AutoScan

NOTICE!
Some Pelco controllers do not support all the preset command numbers. Consult the specific Pelco controller's documentation for supported preset commands.

5 Pelco On-Screen Menus

You can program the AutoDome through the Pelco on-screen display (OSD) menus. To access the Pelco menus, you must configure the AutoDome for **Pelco Mode** and invoke the Pelco main **Setup Menu**.

5.1 Setup Menu

The Pelco main **Setup Menu** provides access to the programmable AutoDome settings. Some menu items are locked and require a system password to use. Menu items marked with an ***** are the default settings.

To open the Pelco main Setup Menu (locked commands):

1. Press **95**-**PRESET** (press the **PRESET** button for approximately 2 seconds to open).
2. Use the joystick to highlight a menu item.
3. Press either the **Focus** or the **Iris** key to open a menu item.
4. Follow the on-screen instructions at the bottom of the screen.

Setup Menu	
Exit...	
Command Lock:	OFF
Bosch Menu	
Camera Setup	
PTZ Setup	
Edit Password	
*FastAddress:	Not Set
Advanced	
Software Version	
Ack and Reset Alarms	
Restore All Settings	
Reset All Memory	
* = Factory Setting	
Focus / Iris: Select	

NOTICE!
Use Zoom to select the **Exit** item from anywhere in a menu.

Menu	Description
Exit	**Exits the menu.**
Command Lock (locked)	Allows or prohibits accessing locked commands. (If password is set, you are prompted to enter the password.
Bosch Menu (locked)	Accesses the full AutoDome configuration menu and all AutoDome settings.
Camera Setup	Accesses the White Balance and Night Mode camera settings.
PTZ Setup	Accesses the tours, tour periods, scan speed, edit presets, limit stops, recording, and AutoPivot settings.
Edit Password (locked)	Changes the password.
FastAddress (locked)	Sets or changes a camera address.

Menu	Description
Exit	**Exits the menu.**
Software Version	Displays the current software versions.
Ack and Reset Alarms	Acknowledges and resets active alarms.
Restore All Settings (locked)	Restores all settings to their original default setting.
Reset All Memory (locked)	Clears all settings, including scene shots, tours, and recordings stored in the AutoDome memory.

NOTICE!
After a period of 4.5 minutes of inactivity, the OSD menu times-out and exits without warning. Some unsaved settings can be lost!

5.1.1 Command Lock (locked)

The Pelco **Command Lock Menu** allows or prohibits the use of locked commands. The default setting is **ON**.

NOTICE!
If the Command Lock is set to **ON** and you press **Focus** or **Iris** on a locked command, the AutoDome displays the on-screen message: “Command is Locked.”

5.1.2 Bosch Menu (locked)

The **Bosch Menu** allows full access to the AutoDome main **Setup Menu** and all AutoDome configuration settings.

Pelco menu			**Bosch menu**
Setup Menu			**Setup Menu**
Exit...			
Command Lock:	OFF		Exit...
Bosch Menu			Camera Setup
Camera Setup			Lens Setup
PTZ Setup			PTZ Setup
Edit Password			Display Setup
*FastAddress:	Not Set		Communication Setup
Advanced			Alarm Setup
Software Version			Language
Ack and Reset Alarms			Advanced
Restore All Settings			Diagnostics
Reset All Memory			
* = Factory Setting			
Focus / Iris: Select			Focus / Iris: Select

Refer to *Section 2: On-Screen Display Menu Navigation* for a complete description of Bosch menus and configuration settings.

Camera Setup (unlocked)

The Pelco **Camera Setup Menu** provides access to camera settings.

```
Camera Setup

  Exit...
* White Bal:      OUTDOOR
* Night Mode:     AUTO




  * = Factory Setting
  Focus / Iris: Select
```

Camera Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Exits the menu.?		
White Balance	Sets a default value in case the Pelco controller disables the white balance.	**OUTDOOR**: Sets a default setting if the controller disables white balance. **INDOOR**: Sets a default setting if the controller disables white balance.	**OUTDOOR**
Night Mode	Switches from color to monochrome.	**ON**: Sets Night Mode on. **OFF**: Sets Night Mode off. **AUTO**: Sets Night Mode to Auto set.	**ON** (Day/Night models only)

5.1.3 PTZ Setup (unlocked)

The Pelco **PTZ Setup Menu** provides access to the PTZ settings such as tours, scan speed, presets, limit stops, recording, and AutoPivot.

```
PTZ Setup

  Exit...
* Edit Tour 1...
* Edit Tour 2...
* Tour 1 Period:  5 sec
* Tour 2 Period:  5 sec
* Scan Speed      30 deg/sec
  Edit Presets...
* Limit Stops:    OFF
* Recording:      "A"
* Autopivot:      ON

  * = Factory Setting
  Focus / Iris: Select
```

PTZ Setup Menu Choices:

Menu	Description	Sub-menu / Description	Default Setting
Exit	Exits the menu.?		
Edit Tour 1	Accesses the **Add / Remove Scenes On Standard Tour 1 Menu**.	**Exit**: Exits the menu. **Scene (1 - 5)**: Adds or removes scenes from the **Standard Tour**.	
Edit Tour 2	Accesses the **Edit Custom Tour Menu**.	**Exit**: Exits the menu. **Scene (1 - 5)**: Adds or removes scenes from the **Custom Tour**.	
Tour 1 Period	Changes the length of waiting time between presets.	Sliding scale: – (3 sec. to 10 min.) +	**5 sec.**
Tour 2 Period	Changes the length of waiting time between presets.	Sliding scale: – (3 sec. to 10 min.) +	**5 sec.**
Scan Speed	Changes the Autopan and AutoScan speeds.	Sliding scale: – (1°/sec to 60°/sec) +	**30°/ sec.**
Edit Presets	Modifies preset scenes.	1-99 scenes	
Limit Stops	Toggles the Limit Stops for AutoScan.	**ON** or **OFF**	**OFF**
Recordings	Selects record Pattern 1 or 2, if normal pattern command does not respond.	"**A**" or "**B**"	**"A"**
AutoPivot	Follows a subject while beneath the camera, without inverting the picture.	**ON or OFF**	**ON**

5.1.4 Other Menus

Menu	Description	Default Setting
Edit Password	Sets or displays the password. See Section 1.4 Setting Passwords, page 8.	
FastAddress (locked)	Sets or changes the AutoDome address.	**Not Set**
Software Version (unlocked)	Displays the camera software version.	
Ack and Reset Alarms	Acknowledges and resets alarms. If there is no active alarm input, the OSD displays the following message: "No Active Alarms."	
Restore All Settings (locked)	Restores all settings to their original factory default settings.	
Reset All Memory (locked)	Restores all settings to their original factory default settings and clears all user programmed settings such as preset scenes and recordings.	

6 Keyboard Commands by Number

Locked	Function Key	Comm No.	Command	Description
	On/Off	1	Scan 360°	Autopan without limits
	On/Off	2	Autopan	Autopan between limits
*	On/Off	3	Iris Control	Enters menu (auto, manual)
*	On/Off	4	Focus Control	Enters menu (spot, auto, manual)
	On/Off	7	Play Custom Pre-position Tour	Activate/Deactivate
	On/Off	8	Play Pre-position Tour	Activate/Deactivate
*	On/Off	9	Inactivity Mode	Enters menu (Off, Return to Scene 1, Recall Previous PTZ Command)
*	On/Off	11	Auto Iris Level Adjust	Enters Iris Level Adjustment menu
	On/Off	14	Set Autopan and Scan Speed	Enters speed adjustment slide bar
	On/Off	15	Set Pre-position Tour Period (dwell)	Enters dwell adjustment slide bar
*	On/Off	18	AutoPivot Enable	Enables/disables AutoPivot
	On/Off	20	Backlight Comp	Backlight Compensation
*	On/Off	23	Electronic Shutter	Enters Shutter Speed slide bar
	On/Off	24	Stabilization	Electronic Stabilization
	On/Off	26	Wide Dynamic Range	Activate/Deactivate
*	On/Off	35	White Balance Mode	Enters White Balance menu
*	On	40	Restore Camera Settings	Restores all setting to their original defaults
*	On/Off	41	Line Lock Phase Adjust	Enters delay adjustment slide bar
*	On/Off	42	Sync Mode	On–Line Lock Off–Internal
*	On/Off	43	Auto Gain Control	AGC–On, Auto, Off
*	On/Off	44	Sharpness	Enters Sharpness menu
*	On	46	Advanced Menu	Enters Main Setup menu
	On	47	View Factory Settings	View all menu default settings
	On/Off	50	Playback A, continuous	Activate/Deactivate
	On/Off	51	Playback A, single	Activate/Deactivate
	On/Off	52	Playback B, continuous	Activate/Deactivate
	On/Off	53	Playback B, single	Activate/Deactivate
	On/Off	56	Night Mode Menu	On, Off, Auto (Day/Night only)
	On/Off	57	Night Mode Setting	Enables/disables Night Mode (Day/Night only)
*	On/Off	58	Day/Night Threshold	On–menu (Day/Night only)
	On/Off	59	Night Mode Priority	Motion–Activates Night Mode before slow shutter, preserving full-frame integration as light is reduced. Color–Activates slow shutter before Night Mode, preserving color longer as light is reduced.
*	On/Off	60	On Screen Display	On–Enable Off–Disable

Locked	Function Key	Comm No.	Command	Description
*	On	61	Display Adjust	Adjust On-screen Display
	On	62	Pre-position Title menu	Enters Pre-position Title menu. Refer to *Section 3.3 Specifying a Shot or a Sector Title, page 26*.
*	On	63	Zone Title Menu	Enters Zone Title menu. Refer to *Section 3.3 Specifying a Shot or a Sector Title, page 26*.
	On	64	Alarm Status	Enters Alarm Status menu
	Off	65	Alarm Acknowledge	Acknowledge alarm or deactivate physical outputs
	On	66	Display Software Version	Displays software version number
*	On/Off	69	Alarm Rule Activation/Deactivation	On–Enables all alarm rules Off–Disables all alarm rules
	On	72	Re-initialize Camera	Performs camera/lens re-initialization functions
	On/Off	78	AutoTrack	Turns AutoTrack on or off
*	On	79	Camera Height	Enters the Camera Height menu
*	On/Off	80	Digital Zoom Lock	Turns digital zoom on and off
	On/Off	81	Alarm Output 1 Open Collector	On–Activates output Off–Deactivates output
	On/Off	82	Alarm Output 2 Open Collector	On–Activates output Off–Deactivates output
	On/Off	83	Alarm Output 3 Open Collector	On–Activates output Off–Deactivates output
	On/Off	84	Alarm Output 4 Relay	On–Activates output Off–Deactivates output
*	On/Off	86	Sector Blanking	Enters Sector Blanking menu
*	On/Off	87	Privacy Masking	Enters Privacy Masking menu
	On/Off	89	Preposition Confirmation	On–Isues a message that prompts for approval to overwrite a preposition Off–No confirmation message issued
	On/Off	90	Command Lock/Unlock	On–Lock on Off–Lock off
*	On/Off	91	Lens Polarity Menu	On–Reverse Off–Normal
*	On/Off	92	Lens Polarity Menu	On–Reverse Off–Normal
*	On/Off	93	Lens Polarity Menu	On–Reverse Off–Normal
*	On/Off	94	Set Azimuth Zero Point	Sets the zero degree pan position. Refer to *Section 7.8 Azimuth, Elevation, and Compass Directions, page 50*.

Locked	Function Key	Comm No.	Command	Description
	On/Off	95	Display Azimuth/Elevation Readings	On–Displays azimuth/elevation readings Off–Hides azimuth/elevation readings Refer to *Section 7.8 Azimuth, Elevation, and Compass Directions, page 50*.
	On/Off	96	Display Compass Readings	On–Displays compass heading Off–Hides compass heading Refer to *Section 7.8 Azimuth, Elevation, and Compass Directions, page 50*.
	On	99	Factory P/T Home Position	Recalibrates home position; can be used as an Alarm Output
	On/Off	100	Record A	Activate/Deactivate
	On/Off	101	Record B	Activate/Deactivate
	On	997	FastAddress, display	Display current address
	On	998	FastAddress, all units	Display and program current address
	On	999	FastAddress, unaddressed domes	Display and program unaddressed AutoDomes
	Set	“1-99”	Pre-position Programming	Set ##–Programs a preset view
	Shot	“1-99”	Pre-position Recall	Shot ##–Recall programmed preset
	Set	100	Pre-position Menu	Enters the Pre-position menu
	Set/Shot	101	Autopan Left Limit	Set–Programs left limit Shot–Shows limit
	Set/Shot	102	Autopan Right Limit	Set–Programs right limit Shot–Shows limit
	Set	110	Factory P/T Home Position	Set–Recalibrate home position
*	Set	802	Edit Password	Enters the Edit Password menu
*	Set	899	Reset ALL	Restores all settings to original defaults and clears all user-programmed settings
	Set	900	Edit Tour 1 (Standard)	Enters the Standard Tour Scene menu
	Shot	900	Edit Tour 2 (Custom)	Enters the Custom Tour Scene menu
	Set/Shot	901-999	Adds/Removes a Preposition Shot from Tour 1	Set ###–Adds preset Shot ###–Removes preset

7 Advanced Features

This chapter details the advanced features of the VG5 AutoDome Camera.

7.1 Alarm Rules

The AutoDome features a powerful alarm rule engine. In its simplest form, an alarm rule defines those inputs that activate specific outputs. In its more complex form, a rule can be programmed to take any combination of inputs and keyboard commands to perform a dome function. There are numerous combinations of alarm inputs and outputs that can be programmed into twelve alarm rules.

7.1.1 Controlling Alarm Rules

The AUX 69 command allows a user to enable or disable all alarm rules. By default, alarm rules are enabled until the OFF-69-ENTER command is issued from a keyboard (there is no corresponding menu item for this command). Disabling alarms rules does not erase the rule, the AutoDome preserves the user-defined settings and the rule data is restored when the ON-69-ENTER command is issued.

The OFF-69-ENTER command performs the following actions:

- Disables all alarm rules
- Displays the message “Ack and Reset Alarms” if an alarm-rule triggered alarm is active when the AutoDome receives the disable command. You must acknowledge the alarm before the rule is disabled.
- Prevents the modification of an alarm rule while disabled.

7.1.2 Alarm Rule Examples

Following are three examples for setting up alarm rules. The first example is a basic alarm rule, and the second and third examples are more complex.

Example 1: Basic Alarm Rule

Scenario: We want a door alarm contact to:

1. Flash an OSD message (***ALARM 1***) on the display when the alarm is triggered.
2. Move the AutoDome camera to a saved position. (For this example Shot 7.)
3. Transmit a Bilinx signal over the coax cable to the headend system, such as an Allegiant, to trigger an alarm response.

The sequence to program the above alarm rule example is as follows:

1. Wire the door contact to Input 1 in the AutoDome. This circuit is normally open.
2. Define the Alarm Input(s)
   - From the Inputs Setup menu, ensure that Alarm Input 1 is set to **N.O.** (This is the default setting for Input 1.)

NOTICE! For instruction on wiring alarm and relay connections, see the *VG5 AutoDome Installation Manual*.

3. Define the Alarm Outputs from the Outputs Setup menu:
   a. Ensure Output 5 is set to **OSD**. (This is the default setting for Output 5.)
   b. Set Output 6 to **Shot 7**.
   c. Set Output 7 to **Transmit** (a Bilinx signal to the head end).

4. Set up the Alarm Rule (for this example use Rule 1). Select the Inputs from the Rule Setup menu:
   a. Select **Rule 1**.
   b. Set the first input to **Alarm Input 1**.
5. Select the outputs:
   a. Set the first output to **OSD**.
   b. Set the second output to **Shot 7**.
   c. Set the third output to **Transmit**.
6. Enable the rule:
   – Highlight Enabled and select **YES**.

Example 2: Advanced Alarm Rule

Scenario: A VG5 AutoDome located at an airport is set to AutoPan Between Limits from the parking garage to the airport terminal. The gate entering the airport has an alarm contact connected to the AutoDome, and the perimeter fence in the area of the gate has an infrared (IR) motion detection sensor connected to the AutoDome.

When both the gate contact and motion detector alarms are activated at the same time, we want the alarm rule to:

1. Flash an OSD message (***ALARM 2***) on the monitor.
2. Stop the AutoPan and move the camera to a saved position (Shot 5) viewing the fence.
3. Turn on AutoTrack.
4. Transmit a Bilinx signal to the head end system to trigger an alarm response.

The sequence to program this alarm rule example is as follows:

1. Wire and set the alarm Input(s).
   a. Wire the motion detector to Input 1. (This circuit is normally open.)
   b. Wire the gate alarm contact to Input 5. (This circuit is normally closed.)

NOTICE!

For instruction on wiring alarm and relay connections, see the *AutoDome Modular Camera System Installation Manual*.

2. From the Inputs Setup menu:
   a. Ensure Input 1 (the motion detector) is set to **N.O.** (This setting is the default for Input 1.)
   b. Ensure Input 5 (the gate contact) is set to **N.C.**
3. Set the alarm Outputs from the Outputs Setup menu:
   a. Set Output 5 to **OSD**.
   b. Set Output 6 to **Transmit**.
   c. Set Output 7 to **Shot 5**.
   d. Set Output 8 to **AutoTrack**.
4. Set up the Alarm Rule (for this example use Rule 2). Select the alarm Inputs:
   a. From the Rule Setup menu select **Rule 2**.
   b. Set the first input to **Alarm Input 1**. (The motion detector.)
   c. Set the second input to **Alarm Input 5**. (The gate alarm contact.)
5. Select the alarm Outputs:
   a. Set the first output to **OSD**.
   b. Set the second output to **Shot 5** viewing the fence.
   c. Set the third output to **AutoTrack** and select Latched.
   d. Set the fourth output to **Transmit** (a Bilinx signal to the headend).
6. Enable the alarm Rule:
   – Highlight Enabled and select **YES**.

Example 3: Advanced Alarm Rule using AutoTrack

The following example explains how to set an alarm rule that moves the camera to a preset position and then activates the AutoTrack feature to track an intruder after an alarm is triggered. This example uses the Configuration Tool for Imaging Devices (CTFID) software tool. Refer to the *Configuration Tool for Imaging Devices User Guide*, available at www.boschsecurity.com.

1. Launch the CTFID software from a computer that is connected to a VG5 AutoDome.

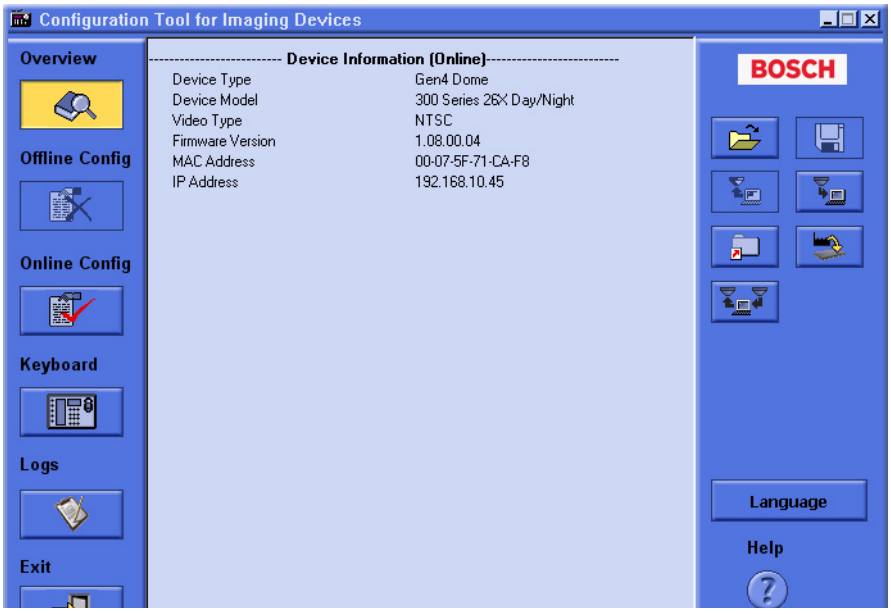


Figure 7.1 CTFID Overview Window

2. Click the **Online Config** button and then expand **Alarm**.

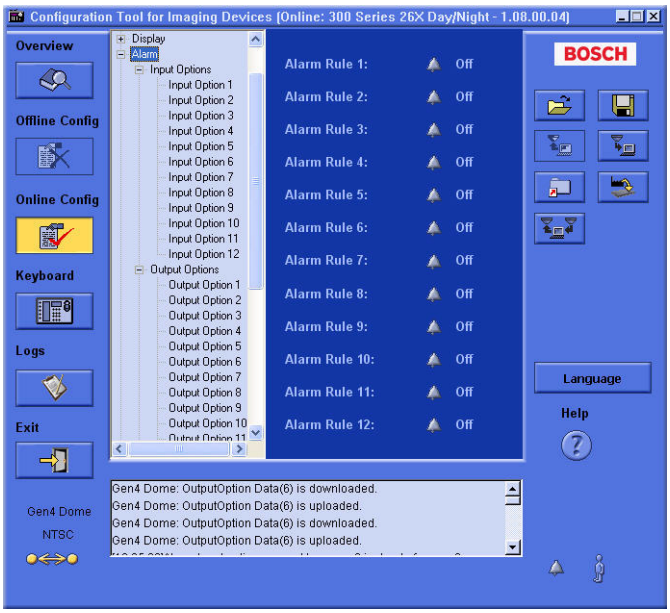


Figure 7.2 Expanded Alarm Group

3. Expand Output Options; then click **Output Option 5**.
4. Select **Tracking** from the Type drop-down list.
5. Click **Output Option 6**.
6. Select **Shot** from the Type drop-down list.

7. Type the number **1** or use the slide bar to specify shot number **1**. (Shot numbers must be set prior to configuring an alarm rule. See *Section 3.2 Setting Preset Shots, page 25*, for instructions).
   The AutoDome moves to this preposition when the alarm rule is true.

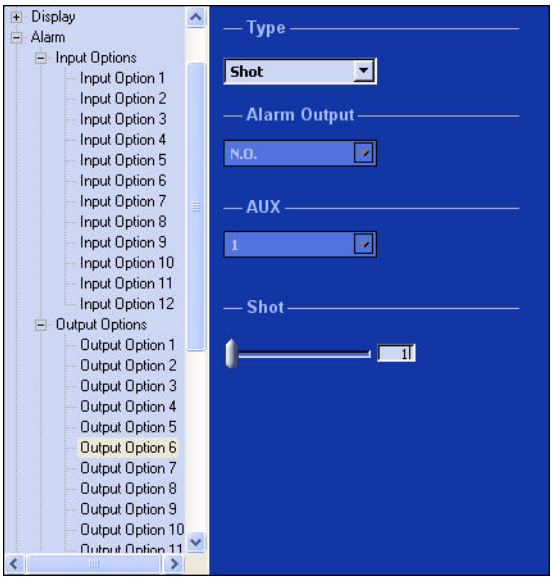


Figure 7.3 Output Option 6 Configuration

8. Expand Alarm Rule; then click **Alarm Rule 1**.
9. Click the **Yes** radio button to enable the rule.
10. Type the number **1** or use the slider bar to select **1** for the Input option.
11. Select **Alarm Input 1** from the Input Option drop-down list.
12. Ensure that the Output number is set to **1**.
13. Select **Shot 1** from the Output Options drop-down list.
    This option instructs the AutoDome to move to pre-position shot 1 when Input 1 is true.

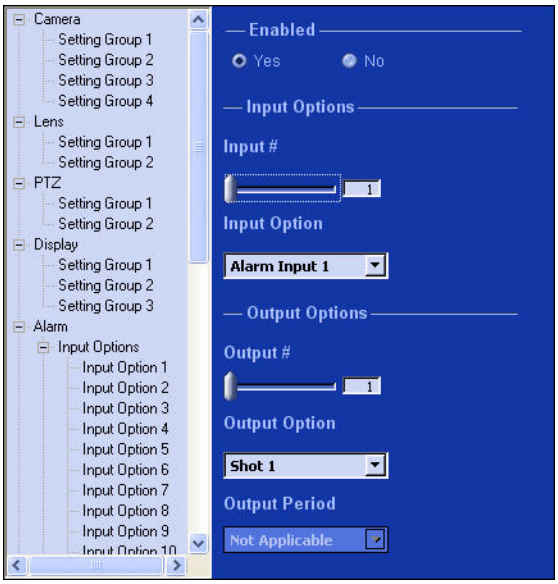


Figure 7.4 Alarm Rule 1 Configuration

14. Move the Output slider bar to **Output 2**.
15. Select **Tracking** from the Output Option drop-down list.
    This option instructs the AutoDome to activate the AutoTrack feature after the input alarm is triggered and after the AutoDome moves to pre-position 1.

16. Select **5 sec** from the Output Period drop-down list.
    This option instructs the AutoDome to turn off the AutoTrack feature after five seconds from when the tracked object is out of view.

7.2 AutoTrack Operation

The AutoDome features enhanced AutoTrack software with more versatility and smoother object tracking. AutoTrack continuously follows an individual even if the person passes behind a Privacy Mask. When used with Virtual Mask, it is able to ignore predefined areas of background motion.
You can manually start AutoTrack or program the AutoDome to automatically turn on AutoTrack.

- **Manual**
  - Enter the keyboard command **ON-78-ENTER**.
  - In Pelco Mode, open the Main menu, select the Advanced menu, and then select AutoTrack On.
- **Automatic**
  - During a pre-position tour.
  - During AutoPan.
  - AutoDome activates AutoTrack after a period of Inactivity (Return to Scene 1 or Return to Previous Aux), if AutoTrack is programmed for these activities.

NOTICE!
For proper operation AutoTrack requires that the camera height be set in the software. Open the Bosch Main menu, select the Advanced menu and select Camera Height to enter the height.

7.2.1 AutoTrack Settings and Recommendations

AutoTrack operates by recognizing an individual in motion and zooms-in to approximately 50% of the field of view for an average target height of six feet. In addition to the camera height, other factors may interfere with AutoTrack operation.

Setting the Camera Height

To ensure smooth tracking set the Camera Height accurately. Bosch recommends a minimum camera height of 3.6 m (12 ft).

1. Press **OFF-90-ENTER** to turn off the command lock.?
2. Press **ON-46-ENTER** to access the **Main** Menu.?
3. Use the joystick to highlight the **Advanced** menu.?
4. Press **Focus/Iris** to open the menu.?
5. Highlight the **Camera Height** option and press the **Focus/Iris** button.?
6. Enter a value between 3.6 m (12 ft) and 30.7 m (100 ft).
7. Press **Focus/Iris** again to accept the camera height value.
8. Exit the **Advanced** menu; then exit the **Main** menu.

Ensuring Smooth AutoTrack Operation

Factors such as the viewing angle and unwanted motion (from trees, for example) may interfere with AutoTrack operation. Use the following recommendations to ensure smooth AutoTrack operation:

- **Mount/Mounting Surface Stability**
  - Mount the camera in the most stable position. Avoid locations affected by vibrations, such as those caused by a roof-top air conditioner. These vibrations may cause complications when the camera zooms-in on a target.
  - Use the pendant arm mount, if possible. This mount option provides the most stability for the camera.
  - Use guy wires to protect against strong winds if using the parapet mount.
- **Field of View**
  - Select a location and viewing angle that allows the flow of people to move across the camera's field of view.
  - Avoid motion that moves directly towards the camera.
  - Avoid locations that attract large numbers of people, such as retail stores or intersections.
- **Unwanted Motion**
  - Use the Virtual Masking feature (see *Section 7.3 Virtual Masking, page 48*) to mask unwanted motion from trees or cars.
    Bosch recommends that you draw the virtual mask 10% larger than the object to be masked.
  - Avoid neon lights, flashing lights, night time lights, and reflected light (from a window or mirror, for example). The flickering of these lights can affect the AutoTrack operation. Use a Virtual Mask to hide these type of lights if they cannot be avoided.
  - Check the virtual mask periodically to ensure that it still covers the entire object to be masked. Adjust the mask if necessary.

7.2.2 AutoTrack Optimization

The AutoDome achieves optimum tracking performance when the focal length of the lens during AutoPan is as close to the focal length of the lens during an AutoTrack operation. The ambient light conditions also affect the AutoTrack performance.

Dynamic Light Conditions

The ambient lighting conditions affect AutoTrack performance, especially in outdoor dynamic lighting conditions that change daily or hourly. To optimize the AutoTrack performance under changing light conditions, Bosch recommends that you configure the AutoTrack Sensitivity and the AutoPan speeds.

Bosch recommends setting the AutoTrack Sensitivity to Auto and suggests the following AutoPan speed for outdoor conditions:

Camera Focal Length	Maximum Suggested AutoPan Speed (degrees/sec)
Near-field (Wide Angle)	5
Mid-field	2
Far-field (Telephoto)	1

If you need a higher AutoPan speed, set the AutoTrack Sensitivity to a value between 1 and 10 in the Advanced Feature Setup menu.

Setting AutoTrack Optimization Parameters

1. Press **OFF-90-ENTER** to turn off the command lock.?
2. Press **ON-46-ENTER** to access the **Main** Menu.?
3. Use the joystick to highlight the **Advanced** menu.?
4. Select the AutoTrack Sensitivity option and change the parameter to **Auto** or to a value between **1–10**.?
5. Exit the **AutoTrack Sensitivity** menu. Then, exit the **Advanced Feature Setup** menu.
6. Access the **PTZ Setup** menu.
7. Select the **AutoPan** option and change the parameter to one of the suggested values in the table above.
8. Exit the **AutoPan** menu. Then, exit the **PTZ Setup** menu and finally exit the **Main** menu.

Consistent Light Conditions

You may use higher AutoPan speeds in consistent indoor or outdoor ambient light conditions, but Bosch recommends not exceeding a speed of more than 15 degrees/sec. Then modify the AutoTrack Sensitivity setting to reach the optimal results.

7.3 Virtual Masking

Virtual Masking is a unique Bosch technology that allows you to create an “invisible” area that ignores unwanted background motion. These invisible masks are similar to privacy zones, except that the AutoDome AutoTrack and Motion Detection algorithms can see them.

– To configure a Virtual Mask, open the **Main** menu, select the **Advanced** menu, then select **Virtual Masking**. To setup a Virtual Mask follow the on-screen menu instructions.
– In Pelco Mode, open the Main menu, select the Advanced menu, then select Virtual Masking. To setup a Virtual Mask follow the on-screen menu instructions.

NOTICE!
Draw the mask 10% larger than the object to ensure that the mask completely covers the object as the AutoDome zooms in and out.

7.4 Privacy Masking

Privacy Masking is used to block out a specific area of a scene from being viewed. Mask choices include black, white, or blurred, and can be configured with three, four, or five corners to cover more complex shapes.

NOTICE!
Privacy Masking does not hinder AutoTrack from tracking an object.

– To configure a Privacy Mask, open the **Main** menu, select **Display Setup**, and then select **Privacy Mask**. Alternatively, enter the keyboard command **ON-87-ENTER**. To setup a privacy mask, follow the on-screen menu instructions.
– In Pelco Mode open the **Pelco Main** menu, open the **Bosch** menu, select the **Display Setup** menu, and finally select **Privacy Masking**. To setup a privacy mask, follow the on-screen menu instructions.

NOTICE!
Draw the mask 10% larger than the object to ensure that the mask completely covers the object as the AutoDome zooms in and out.

7.5 Motion Detection with Region of Interest (Preset positions 90 through 99)

With the VG5 Series AutoDome, the motion detection software can be configured to create a Region of Interest within multiple preset positions or scenes. It can take advantage of Virtual Masking to ignore motion in predefined areas. Motion Detection can also be used as an Alarm Rule input.

Preset positions 90 through 99 are reserved for programming motion detection scenes.

NOTICE!

Motion Detection always takes precedence over AutoTrack object tracking.

To set up a scene with Motion Detection:

1. Choose an unused Preset position from 90 to 99. For this example use Preset scene 95.
2. Enter the keyboard command **SET-95-ENTER**.
3. Select **YES** at the Apply Motion Detection? prompt. (If NO is selected, the Preset scene does not activate Motion Detection.)
4. Select **YES** at the Apply Region of Interest? prompt. (If NO is selected, the entire scene is used for Motion Detection.)
5. Follow the on-screen menu instructions to construct the shape of the screen area you want to detect motion within.

NOTICE! Up to five (5) anchor points can be used to form the area which you want to detect motion within. Motion Detection is not activated until the Preset scene is recalled. The Motion Detection icon "M" appears in the upper left-hand corner of the display.

7.6 Image Stabilization

Image Stabilization becomes increasingly important as zoom ranges are extended. The advanced image stabilization algorithms of the VG5 Series AutoDome eliminate camera shake for exceptional image clarity. Bosch achieves this clarity without reducing camera sensitivity or picture quality.

- To configure image stabilization, open the **Main** menu, select the **Advanced** menu, and then select **Stabilization** to turn on the feature.
- In Pelco Mode open the **Main** menu, select the **Advanced** menu, and then select **Stabilization** to turn on the feature.

7.7 Pre-position Tour

The VG5 Series AutoDome features (2) preset tours. Each preset scene is saved for playback later.

Tour 1 is a standard tour that only recalls the scenes in the exact sequence they were shot. Scenes can be added or deleted on the tour, but the sequence cannot be changed. To add or remove scenes on Tour 1 enter the keyboard command **SHOT-900-ENTER** and follow the on-screen instructions.

Tour 2 is a customizable tour that allows you to rearrange the sequence of scenes on the tour by inserting and deleting scenes. To enter the Edit Tour 2 menu, enter the keyboard command **SET-900-ENTER** and follow the on-screen instructions.

7.8 Azimuth, Elevation, and Compass Directions

The VG5 AutoDome allows a user to display the azimuth and elevation position, and the compass heading of the camera. The AutoDome displays the position data in the lower-right corner of the image display. These readings are described as:

Azimuth: The pan angle from zero to 359 degrees in one degree increments. An azimuth of zero degrees corresponds to North.

Elevation: The tilt position from zero (horizon) to –90 degrees (camera pointing straight down) in one degree increments.

Compass: The cardinal or intercardinal (N, NE, E, SE, S, SW, W, NW) heading in which the camera is pointing.

The AutoDome uses the azimuth to determine the compass direction. The following table shows the azimuth range and its corresponding compass heading:

Azimuth Range	Compass Direction
21° to 65°	NE (Northeast)
66° to 110°	E (East)
111° to 155°	SE (Southeast)
156° to 200°	S (South)
201° to 245°	SW (Southwest)
246° to 290°	W (West)
291° to 335°	NW (Northwest)
336° to 20°	N (North)

7.8.1 Setting the Azimuth Zero Point

The installer must calibrate the Azimuth Zero point. The AutoDome uses the Azimuth Zero point, usually set to magnetic North, as the zero degree pan position and as the North compass heading. The AutoDome then displays the azimuth reading and the compass heading based on the number of degrees from the Azimuth Zero point.

To set the Azimuth Zero point:

1. Determine the North compass heading, then move the camera to that position.
2. Press **OFF-90-ENTER** to turn off the command lock (if active).
3. Press **ON-94-ENTER** to set the Azimuth Zero point.

CAUTION!
Bosch recommends that only the installer calibrate the Azimuth Zero point. A recalibration to the Azimuth Zero point may cause inaccurate compass headings.

7.8.2 Displaying Azimuth, Elevation, and Compass Headings

You can display only the azimuth/elevation readings or only the compass reading, or you can display both readings at the same time. The AutoDome displays the azimuth/elevation readings and the compass heading in the following way:

180 / –45 S

where:

- **180** is the Azimuth or the pan location in degrees.
- **–45** is the Elevation or the tilt location in degrees.
- **S** is the compass direction (cardinal or intercardinal).

1. Press **ON-95-ENTER** to display the azimuth/elevation reading.
2. Press **ON-96-ENTER** to display the compass heading.
3. Press **OFF-95-ENTER** to hide the azimuth/elevation reading.
4. Press **OFF-96-ENTER** to hide the compass heading.

8 Troubleshooting Guide

8.1 VG5 AutoDome Operation and Control

Problem	Solution
No video	– Check that the Green LED on the AutoDome CPU board is on. This LED indicates video from the camera. **If the Green LED is off, then:** – Check that the Red LED on the AutoDome CPU board is slowly blinking. This LED indicates power to the AutoDome power supply board and to the CPU Module. **Red LED on AutoDome CPU M0.odule** **Flash SequenceIndicates:** – 5 sec. on / 0.5 sec. off: Normal operation – Steady on: CPU is locked **If the Red LED is on steady, then:** – Try cycling the AutoDome power off and on. **If the Red LED is off, then:** **If using a Bosch Pendant Power Supply Box:** – Check that Green LED in Power Supply Box is on. This LED indicates mains power through the transformer. **If the Green LED is off, then:** – Turn off the Power. – Check the FX101 fuse for mains power to the Power Supply Box. **If O.K., then:** – Check the FX102 fuse for 24 V power to the AutoDome Pendant. **If O.K., then:** **If using a non-Bosch power supply:** – Check that the mains power to the power supply box is on. **If O.K., then:** – Check that there is 24 V output from the transformer. – Check the connector on top of the AutoDome housing for bent pins. **If O.K., then:** – Check the integrity of all wires and terminal connections to the AutoDome. **If O.K., then:** **If there is power to the AutoDome, then:** – Remove the camera and CPU modules from the AutoDome housing and check that the Green LED on the housing power supply board is on. **If the Green LED is off, then:** – Check that the fuse on the housing power supply board is good.

No camera control	– Ensure that the keyboard and monitor are set to the correct (same) camera number. **If O.K., then:** – Check that the camera address is properly set. Enter **ON**-**997**-**ENTER** to display the camera address. **If address is not set or is incorrect, then:** – Set the camera address using FastAddress (**ON**-**998**-**ENTER)**. **If O.K., then:** – Check that the Amber LED on the AutoDome CPU turns on when receiving pan/tilt commands from the controller keyboard. The Amber LED indicates control is being received. **Amber LED on AutoDome CPU Module** **Flash Sequence** – Off No incoming communications or no power – Solid for 2 seconds Receiving good data – Fast blinking Lost packet(s) **If amber LED does not light when given PTZ commands, then:** – Check if other cameras on the system can be controlled. If not, check the controller and wiring connections. **If O.K., then:** – Check that the RS-232/485 selector switch is properly set to the proper protocol. **If O.K., then:** – Ensure that all Biphase, Bilinx, or RS-232/485 wires are properly connected. See the *VG5 AutoDome Installation Manual*. **If O.K., then:** – Check if you can access the AutoDome OSD menus (**ON**-**46**-**ENTER**). **If O.K., then:** – Confirm that the AutoDome passes homing (**SET**-**110**-**ENTER**). **If AutoDome fails homing, then:** – Contact Bosch Technical Support.
Intermittent camera control	– Check that only the last AutoDome in a daisy chain configuration is terminated with a 100 Ω resistor across the +/- biphase terminals. **If O.K., then:** – Check that the maximum wire distance has not been exceeded for the control protocol (the maximum distance for RS-232 is 50 feet). See the *VG5 AutoDome Installation Manual*. **If O.K., then:** – Check that all wiring meets Bosch recommended standards and specifications. See the *VG5 AutoDome Installation Manual*.
Camera moves when moving other cameras	– Check that the camera address is properly set (**ON**-**997**-**ENTER**). If the camera address is not set, the AutoDome responds to control commands to any camera on the system. **If camera address is not set, then:** – Invoke the **FastAddress Menu** to assign a camera address (**ON**-**998**-**ENTER**).
Cannot access user settings	– Enter the unlock command **OFF**-**90**-**ENTER**. This command may require a password. (Commands automatically lock in 30 minutes.)

Setting FastAddress with an American Dynamics Keyboard	The FastAddress value must match the Unique Identifier for the AutoDome. To set the FastAddress on an American Dynamics keyboard refer to *Section 4.1 Setting FastAddress with Alternative Protocols, page 28*.
Picture is dark	– Check that the Gain Control is set to **AUTO** (**ON**-**43**-**ENTER**). **If O.K., then:** – Check that the Auto Iris Level is set to the appropriate level (**ON**-**11**-**ENTER**). **If O.K., then:** – Check that the video coax is terminated with 75 Ω only at the head end. (Double termination causes dark video.) **If O.K., then:** – Go to the **Camera Setup Menu** and increase the Pre-Compensation setting. **If O.K., then:** – Check that the camera lens cover is removed. **If O.K., then:** – Check that the maximum coax distance has not been exceeded. See the *VG5 AutoDome Installation Manual*. **If O.K., then:** – Restore all camera settings (**ON**-**40**-**ENTER**).
Colors are not correct	– Reset the White Balance to the appropriate selection (**ON**-**30**-**ENTER**). **If O.K., then:** – Go to the **Camera Setup Menu** and increase the Pre-Compensation setting. **If O.K., then:** – Check that the maximum coax distance has not been exceeded. See the *VG5 AutoDome Installation Manual*. **If O.K., then:** – Restore the default settings (**ON**-**40**-**ENTER**).
Background is too bright to see subject	– Turn on backlight compensation (ON-20-ENTER).
Video is rolling, noisy or distorted	– Ensure that the Synch Mode is set to Internal (**OFF**-**42**-**ENTER**). **If O.K., then:** – Check that the maximum coax distance has not been exceeded. See the *VG5 AutoDome Installation Manual*. **If O.K., then:** – Check the integrity of all BNC connectors and splices. **Note:** Connecting a network cable to the interface board of a non-IP AutoDome causes video distortion. – Remove the network cable from the interface board RJ-45 connector. **If O.K., then:** – Contact Bosch Technical Support.
Day/Night camera does not switch automatically when image is dark	– Check that the Day/Night mode is set to **AUTO** (**ON**-**56**-**ENTER**). **If O.K., then:** – Set Gain Control to AUTO (**ON**-**43**-**ENTER**).

Inside of Outdoor Pendant bubble is foggy	– Check the status of the Heater Module (**ON**-**66**-**ENTER**). **If status reports Heater No Power, then:** – Turn off the power to the AutDome. – Check the FX103 fuse in the Power Supply Box for power (24 V) to the heater module. **If O.K., then:** – Check all wiring and connector pins to the heater module.
Low Voltage flashing on monitor display	– If using a non-Bosch power supply, confirm that it meets the Bosch AutoDome power ratings. See the AutoDome Datasheet for specifications. **If O.K., then:** – Check the mains input line voltage. **If O.K., then:** – Check that the maximum wire length from the power supply has not been exceeded. See the *VG5 AutoDome Installation Manual*. **If O.K., then:** – Measure the AC voltage input to the camera while power is applied to the camera. The voltage must be ≥ 21 VAC to stop the message.

8.2 VG5 Series AutoDome Audio

The following diagram illustrates the path for audio transmissions between a microphone/ AutoDome and a computer that plays the audio.

Audio Connections with an VG5 600 Series AutoDome

In this illustration the VG5 600 Series AutoDome connects to a Bosch Video/Audio IP Encoder via a coaxial cable. The computer that plays the audio is connected to the encoder via an Ethernet cable.

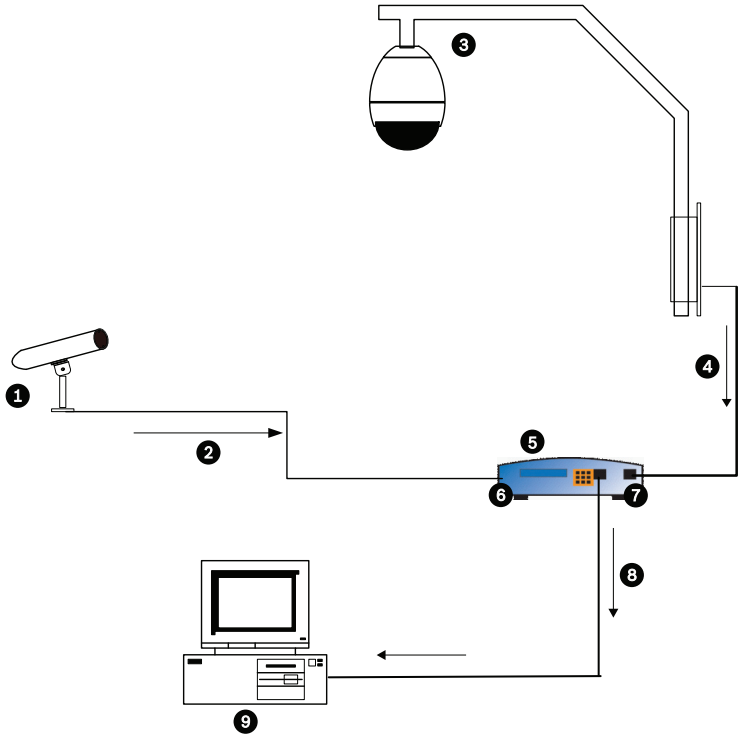


Figure 8.1 Typical Audio Connections for an Analog AutoDome

1	Microphone	6	Audio In
2	Coaxial Connection; Microphone to Bosch Video/Audio Encoder; 10 m (33 ft) maximum distance	7	Video In
3	VG5 600 Series AutoDome	8	Ethernet Connection; Bosch Video/Audio Encoder to a PC
4	Coaxial Connection; VG5 600 Series Autodome to a Bosch Video/Audio Encoder	9	Computer with Bosch DiBos Software
5	Bosch Video/Audio Encoder		

Problem	Solution
No Audio	– Check the computer receiving the audio from the VG5 AutoDome or from the IP Encoder. – Check the computer's audio settings. Ensure that the sound levels are at an audible level. – Check the computer's audio output card and speakers. Play a secondary source of audio on the computer. If you still do not hear audio replace the speakers and try again.
	If O.K., then: – Ensure that the Audio option is enabled for the IP device. a. Access the Settings Web page for the IP-enabled device. b. Expand the Encoder Settings link, then click Audio Settings. c. Ensure that On is selected from the Enable Audio drop-down list. Then, click Set.
	If O.K., then: – Check the microphone. Connect appropriate speakers directly to the microphone at the camera site and confirm that the audio is clear and audible at the location. An audio problem or noise at the source will further degrade as it travels through all the cables and connections.
	If O.K., then: – Verify the cable type and installation used for audio connections between the microphone and the VG5 AutoDome. – Cable type: Coaxial – Cable length: 10 m (33 ft), maximum Refer to the *VG5 AutoDome Installation Manual* for more information.

Problem	Solution
	If O.K., then: – Check all network connections. – If the video is clear and contains no distortion, then the network connections are probably not the source of audio problems. – Ensure that the maximum distance between any two Ethernet connections is 100 m (328 ft). Refer to the *VG5 AutoDome Installation Manual* for more information.
Poor Audio	– Check the computer receiving the audio from the VG5 AutoDome or from the IP Decoder. – Check the computer's audio output card and speakers. Play a secondary source of audio on the computer, if you hear static then replace the speakers and try again. – Check the computer's audio output card and speakers. Play a secondary source of audio on the computer. If you still do not hear audio replace the speakers and try again. **If O.K., then:** – Check the Gain settings and the peak gain value. a. Access the Settings Web page for the IP-enabled device. b. Expand the Encoder Settings link, then click Audio Settings. c. Adjust the Gain level so that the peak value stays within the green area. Refer to the *VG5 AutoDome Installation Manual* for complete information. **If O.K., then:** – Check the location of the microphone and the audio cables. – Line level audio is typically between 700 mV and 2 V so it may be affected by AC power or transmission sources. – Ensure that there is a maximum (at least 1 foot per 100 VAC) distance between the microphone and audio cables and the AC source. **If O.K., then:** – Verify the cable type and installation used for audio connections between the microphone and the VG5 AutoDome. – Cable type: Coaxial – Cable length: 10 m (33 ft), maximum Refer to the *VG5 AutoDome Installation Manual* for more information.

9 User Command Table

Function Key	Comm No.	Command	Description
On/Off	1	Scan 360°	Autopan without limits
On/Off	2	Autopan	Autopan between limits
On/Off	7	Play Custom Pre-position Tour	Activate/Deactivate
On/Off	8	Play Pre-position Tour	Activate/Deactivate
On/Off	14	Set Autopan and Scan Speed	Enters speed adjustment slide bar
On/Off	15	Set Pre-position Tour Period (dwell)	Enters dwell adjustment slide bar
On/Off	20	Backlight Comp	Backlight Compensation
On/Off	24	Stabilization	Electronic Stabilization
On/Off	26	Wide Dynamic Range	Activate/Deactivate
On	47	View Factory Settings	View all menu default settings
On/Off	50	Playback A, continuous	Activate/Deactivate
On/Off	51	Playback A, single	Activate/Deactivate
On/Off	52	Playback B, continuous	Activate/Deactivate
On/Off	53	Playback B, single	Activate/Deactivate
On/Off	56	Night Mode Menu	On, Off, Auto (Day/Night only)
On/Off	57	Night Mode Setting	Enables/Disables Night Mode (Day/Night only)
On	62	Pre-position Title Menu	Enters Pre-position Title menu
On	64	Alarm Status	Enters Alarm Status menu
Off	65	Alarm Acknowledge	Acknowledge alarm or deactivate physical outputs
On	66	Display Software Version	Displays software version number
On	72	Re-initialize Camera	Performs camera/lens re-initialization functions
On/Off	78	AutoTrack	Turns AutoTrack on or off
On/Off	81	Alarm Output 1 Open Collector	On–Activates output Off–Deactivates output
On/Off	82	Alarm Output 2 Open Collector	On–Activates output Off–Deactivates output
On/Off	83	Alarm Output 3 Open Collector	On–Activates output Off–Deactivates output
On/Off	84	Alarm Output 4 Relay	On–Activates output Off–Deactivates output
On/Off	89	Preposition Confirmation	On–Issues a message that prompts for approval to overwrite a preposition Off–No confirmation message issued
On/Off	90	Command Lock/Unlock	On–Lock on Off–Lock off
On/Off	95	Display Azimuth/Elevation Readings	On–Displays azimuth/elevation readings Off–Hides azimuth/elevation readings
On/Off	96	Display Compass Heading	On–Displays compass heading Off–Hides compass heading
On/Off	100	Record A	Activate/Deactivate
On/Off	101	Record B	Activate/Deactivate

Function Key	Comm No.	Command	Description
On	997	FastAddress, display	Display current address
On	998	FastAddress, all units	Display and program current address
On	999	FastAddress, unaddressed domes	Display and program unaddressed AutoDomes
Set	“1-99”	Pre-position Programming	Set ##–Programs a preset view
Shot	“1-99”	Pre-position Recall	Shot ##–Recall programmed preset
Set	100	Pre-position Menu	Enters the Pre-position menu
Set/Shot	101	Autopan Left Limit	Set–Programs left limit Shot–Shows limit
Set/Shot	102	Autopan Right Limit	Set–Programs right limit Shot–Shows limit
Set	110	Factory P/T Home Position	Set–Recalibrate home position
Set	900	Edit Tour 1 (Standard)	Enters the Standard Tour Scene menu
Shot	900	Edit Tour 2 (Custom)	Enters the Custom Tour Scene menu
Set/Shot	901-999	Adds/Removes a Preposition Shot from Tour 1	Set ###–Adds preset Shot ###–Removes preset

A Appendix: FastAddress Conversions

Sample: If there is video coming from Camera #131, look at the appropriate conversion table below to convert the FastAddress accordingly (i.e. using an AD system 131=3 and using a Sensormatic system 131=32). Ensure that the camera number displayed within the menu on the keyboard represents the converted camera number.

BLOCK 1		**BLOCK 2**		**BLOCK 3**		**BLOCK 4**		**BLOCK 5**		**BLOCK 6**		**BLOCK 7**		**BLOCK 8**	
Bosch	AD	Bosch	AD	Bosch	AD	Bosch	AD	Bosch	AD	Bosch	AD	Bosch	AD	Bosch	AD
1	1	65	1	129	1	193	1	257	1	321	1	385	1	449	1
2	2	66	2	130	2	194	2	258	2	322	2	386	2	450	2
3	3	67	3	131	3	195	3	259	3	323	3	387	3	451	3
4	4	68	4	132	4	196	4	260	4	324	4	388	4	452	4
5	5	69	5	133	5	197	5	261	5	325	5	389	5	453	5
6	6	70	6	134	6	198	6	262	6	326	6	390	6	454	6
7	7	71	7	135	7	199	7	263	7	327	7	391	7	455	7
8	8	72	8	136	8	200	8	264	8	328	8	392	8	456	8
9	9	73	9	137	9	201	9	265	9	329	9	393	9	457	9
10-64	10-64	74-128	10-64	138-192	10-64	202-256	10-64	266-320	10-64	330-384	10-64	394-448	10-64	458-512	10-64

Table 1.1 Address Conversion Table for AD/Manchester Systems

Group 1		**Group 2**		**Group 3**		**Group 4**		**Group 5**		**Group 6**		**Group 7**		**Group 8**	
IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT	IN	OUT
1	1	100	1	199	1	298	1	397	1	496	1	595	1	694	1
2	2	101	2	200	2	299	2	398	2	497	2	596	2	695	2
3	3	102	3	201	3	300	3	399	3	498	3	597	3	696	3
4	4	103	4	202	4	301	4	400	4	499	4	598	4	697	4
5	5	104	5	203	5	302	5	401	5	500	5	599	5	698	5
6	6	105	6	204	6	303	6	402	6	501	6	600	6	699	6
7	7	106	7	205	7	304	7	403	7	502	7	601	7	700	7
8	8	107	8	206	8	305	8	404	8	503	8	602	8	701	8
9	9	108	9	207	9	306	9	405	9	504	9	603	9	702	9
10-99	10-99	109-198	10-99	208-297	10-99	307-396	10-99	406-495	10-99	505-594	10-99	604-693	10-99	703-792	10-99

Table 1.2 Address Conversion Table for AD/Sensormatic RS-422 Systems

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